

DUKE
UNIVERSITY



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BULLETIN
OF
DUKE UNIVERSITY



The College of Engineering

ANNOUNCEMENTS FOR 1957-1958

VOLUME 29

January, 1957

NUMBER 3

Annual Bulletins

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Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

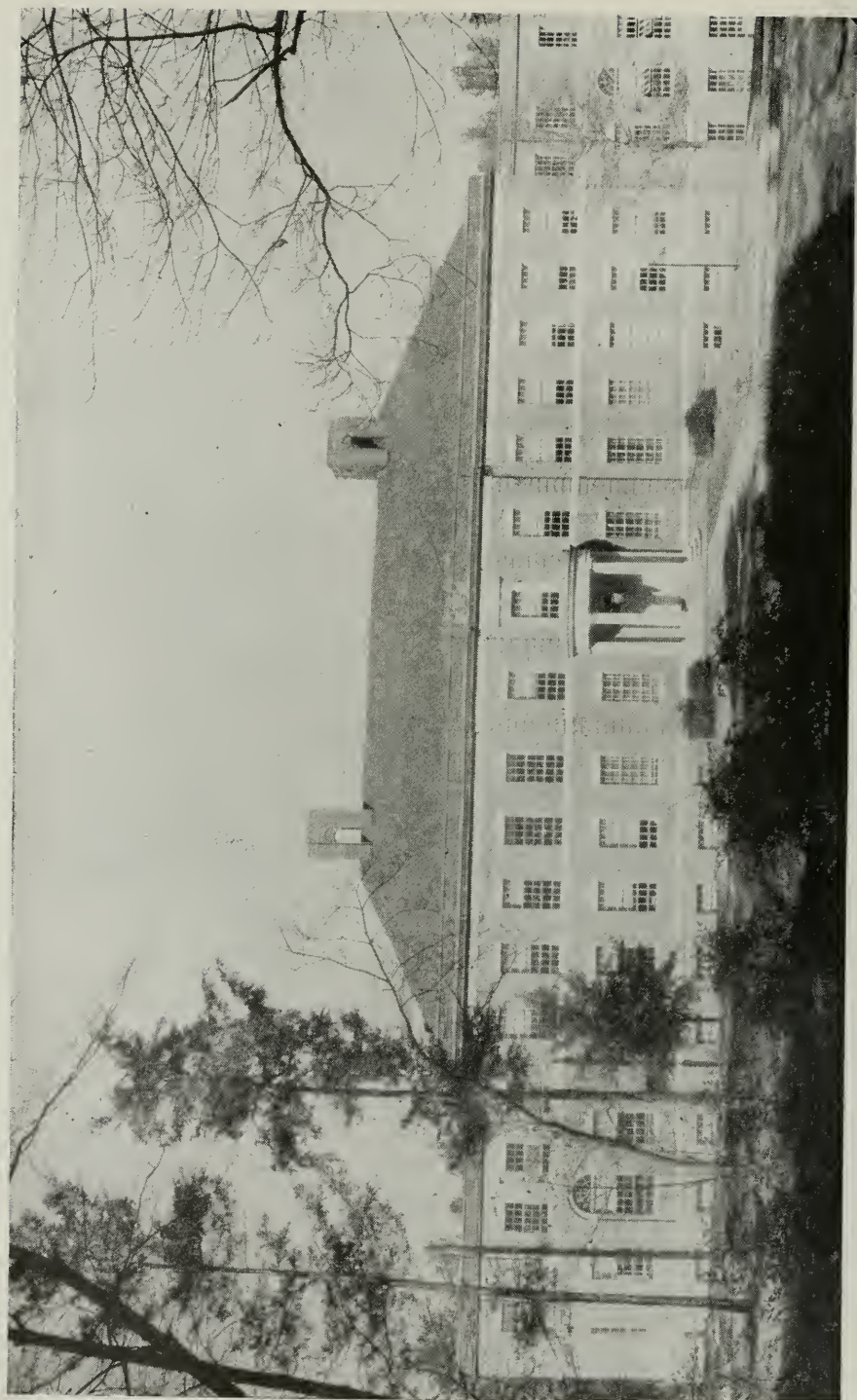
BULLETIN
OF
DUKE UNIVERSITY



COLLEGE OF ENGINEERING

1956-1957
ANNOUNCEMENTS FOR 1957-1958

DURHAM, NORTH CAROLINA
1957



ENGINEERING BUILDING

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Calendar of the Colleges



1957

- September 12. Thursday, 7:30 P.M. Assembly for all entering freshmen; Freshman Orientation begins.
- September 12. Thursday, 7:30 P.M. Assembly for transfer students entering Trinity College and the College of Engineering.
- September 16. Monday. Registration and matriculation of former students of Trinity College and the College of Engineering, who have not pre-registered.
- September 17. Tuesday. Registration and matriculation of new students with advanced standing, Woman's College.
- September 18. Wednesday. Final registration of pre-registered students.
- September 19. Thursday. Fall semester classes begin.
- October 22. Tuesday. Examination in English Usage.
- November 4. Monday. Last day for reporting mid-semester grades.
- November 27. Wednesday, 12:30 P.M. Thanksgiving recess begins.
- December 2. Monday, 8:00 A.M. Classes are resumed.
- December 11. Wednesday. Founders' Day.
- December 21. Saturday, 12:30 P.M. Christmas recess begins.

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- January 6. Monday, 8:00 A.M. Classes are resumed.
- January 11. Saturday, 12:30 P.M. Fall semester classes end.
- January 14. Tuesday. Final examinations begin.
- January 24. Friday. Final examinations end.
- January 28. Tuesday. Registration and matriculation of new students.
- January 29. Wednesday. Last day for registration for the spring semester.
- January 30. Thursday. Spring semester classes begin.
- March 12. Wednesday. Last day for reporting mid-semester grades.
- March 22. Saturday, 12:30 P.M. Spring recess begins.
- March 31. Monday, 8:00 A.M. Classes are resumed.
- May 16. Friday, 5:00 P.M. Spring semester classes end.
- May 19. Monday. Final examinations begin.
- May 29. Thursday. Final examinations end.
- May 31. Saturday. Commencement begins.
- June 1. Sunday. Commencement Sermon.
- June 2. Monday. Graduating Exercises.

The College of Engineering



THE College of Engineering, through its component Departments of Civil, Electrical, and Mechanical Engineering, offers fully accredited programs leading to the degrees of Bachelor of Science in Civil, Electrical, and Mechanical Engineering. In addition, through the Graduate School of Arts and Sciences, it offers work leading to the degree of Master of Science with a major in electrical engineering. Each of the undergraduate curricula requires 148 semester hours of work, four of which are in physical education. The Master's program requires 30 semester hours of graduate work: 24 semester hours of course work and a research-based thesis carrying 6 semester hours of credit. The educational philosophy behind all the programs is to graduate prospective engineers who are not only well grounded in the science and art of their profession, but who are also responsible members of society.

History

The College of Engineering traces its origin to 1887 when instruction in engineering subjects was begun by Trinity College. After the establishment of Duke University, the program in engineering rapidly evolved to its present status through a series of steps that included the formation of separate departments in civil and electrical engineering in 1927, the formation of a separate department in mechanical engineering in 1931, the establishment of the Division of Engineering in 1937, and finally, the incorporation of this Division into the University structure in 1939 as the College of Engineering, one of the three coordinate undergraduate colleges of Duke University. The Master of Science degree with a major in engineering was authorized in 1956.

Relationship to the University

As a part of the University community, the College of Engineering serves its students as the focus of a total educational experience that only a major university can provide. It shares the same campus with Trinity College, the Graduate School of Arts and Sciences, the Divinity School, and the Schools of Law, Nursing, Medicine, and Forestry. The facilities for library, laboratory, and field work and the many activities—religious, intellectual, cultural, and athletic—form part of the environment by which an engineering student is conditioned. Thus he may enjoy simultaneously the broad facilities and challenges of a university and the life and atmosphere of a small college.

Undergraduate Program

The aim of undergraduate engineering education at Duke is to motivate the student to acquire knowledge and understanding in those areas of human endeavor that will equip him for a career in his chosen profession. The program stresses the development of intellectual power and provides a broad scientific background that incorporates the engineering viewpoint. It is designed to develop in the student technical knowledge, skill, and judgment, and to stimulate an interest in the study of the humanities. Among the values of such a program is the stimulus for a student to evolve a personal philosophy that will prepare him for his responsibilities as a professional man and as a citizen.

Both on the campus and in the classroom the emphasis is on the individual. To this end classes are kept small and close contact is maintained between professor and student. In response to the personal interest displayed in him by members of the administration and faculty and by the faculty advisers and student counselors, the student is motivated to accept the responsibility of contributing to the development of the University and the College, and, thereby, himself. For more than a century, this relationship of mutual service between the student and his college has developed men and women who have taken their places as leaders in their professions and as effective citizens wherever their careers have taken them throughout the world.

Liberal Arts-Engineering Cooperative Program

To facilitate and encourage the combining of a maximum of liberal arts studies with professional training, the College of Engineering has developed a special plan of cooperation with approved liberal arts colleges. Under this "three-two" plan, an outstanding student may follow an approved program of study at the cooperating liberal arts college for an initial period of three years and then come to Duke University to complete his studies at the College of Engineering in two more years. At the end of the total period of five years, a degree is granted by the cooperating liberal arts college, and a degree of Bachelor of Science in the appropriate branch of Engineering by Duke University. Inquiries concerning this plan should be addressed to the Dean, College of Engineering, Duke University, Durham, North Carolina.

Summer Session

The Summer Session at Duke University makes available to Duke undergraduate and graduate students and to students from other uni-

versities and colleges a program of instruction in many fields of study. Inquiries concerning this program should be addressed to the Director of the Summer Session, Duke University, Durham, North Carolina.

Graduate Program

Through the Graduate School of Arts and Sciences, the College of Engineering offers work leading to the Master of Science degree with a major in electrical engineering. Details of this program are given in the appropriate departmental section of this bulletin. Half-time instructorships are available to qualified graduate students who need financial assistance. Further information is available from the Chairman, Department of Electrical Engineering, Duke University, Durham, North Carolina. Bulletins and admission application forms are available from the Dean, Graduate School of Arts and Sciences, Duke University, Durham, North Carolina.

Organization

The Engineering Faculty Council considers and legislates on questions of curriculum and adopts regulations concerning those educational, professional, and administrative matters that pertain exclusively to the College of Engineering. The Dean of the College of Engineering serves as Chairman of the Council. The membership includes the President of the University, the Vice-President in the Division of Education, the Assistant to the Vice-President in the Division of Education, the Secretary of the Council, the Chairman and one additional representative from each department of Engineering, the Assistant to the Dean of Engineering, and three members from the University Faculty representing departments in which engineering students are required to take work.

Physical Plant

The College is on the West Campus in a modern building that was first occupied in January 1948. It has a total volume of 1,200,000 cubic feet and provides a floor area of 80,000 square feet. Each of three wings houses the laboratories and the special classrooms of one of the three engineering departments. The main portion of the building has offices, classrooms, and other general facilities.

These general facilities are for the use of all three departments of engineering. They include a library of some 24,200 volumes and 290 periodicals; an auditorium, where audio-visual instruction is given to large groups; a conference room; a student lounge; a photographic dark room; mimeographing and blue printing facilities; and, of course, drafting rooms and classrooms.

Officers of the College for the Year 1956-1957



General Administration

ARTHUR HOLLIS EDENS, B.Ph., A.M., M.P.A., Ph.D., LL.D. <i>President of the University</i>	2138 Myrtle Drive
PAUL MAGNUS GROSS, B.S., A.M., Ph.D. <i>Vice-President in the Division of Education</i>	3816 Dover Road, Hope Valley
CHARLES EDWARD JORDAN, A.B., LL.D. <i>Vice-President in the Division of Public Relations</i>	813 Vickers Avenue
HERBERT JAMES HERRING, A.B., A.M., LL.D. <i>Vice-President in the Division of Student Life</i>	2010 Myrtle Drive
ALFRED SMITH BROWER, A.B. <i>Business Manager and Treasurer</i>	614 West Campus
GERHARD CHESTER HENRICKSEN, A.B., A.M., C.P.A. <i>Comptroller</i>	216 Forest Wood Drive
ALAN KREBS MANCHESTER, A.B., A.M., Ph.D. <i>Assistant to the Vice-President in the Division of Education</i>	2016 Myrtle Drive
MARCUS EDWIN HOBBS, A.B., A.M., Ph.D. <i>Dean of the Graduate School of Arts and Sciences</i>	115 Pinecrest Road
ROBERT B. COX, A.B., A.M. <i>Dean of Undergraduate Men</i>	1107 Ninth Street
RICHARD LOVEJOY TUTHILL, A.B., M.A., Ed.D. <i>University Registrar</i>	2709 Dogwood Road
EVERETT BROADUS WEATHERSPOON, A.B. <i>Director of Admissions, Trinity College and College of Engineering</i>	125 Pinecrest Road

Engineering Administration

WALTER JAMES SEELEY, E.E., M.S. <i>Dean and Director of Research and Development</i>	1005 Urban Avenue
EDWARD KREADY KRAYBILL, B.S. in E.E., M.S.E., E.E. <i>Assistant to the Dean of Engineering</i>	2726 Circle Drive
ROBERT SEAMAN ROWE, B.C.E., M.S., M.Eng., D.Eng. <i>Chairman, Department of Civil Engineering</i>	1107 Urban Avenue
CHARLES ROWE VAIL, B.S. in E.E., M.S., Ph.D. <i>Chairman, Department of Electrical Engineering</i>	2730 Circle Drive
JOHN NELSON MACDUFF, B.S., M.M.E. <i>Chairman, Department of Mechanical Engineering</i>	2733 Dogwood Drive

ENGINEERING FACULTY COUNCIL

Chairman: DEAN W. J. SEELEY.*Secretary:* E. B. WEATHERSPOON.*Assistant to the Dean:* E. K. KRAYBILL.*Civil Engineering:* R. S. ROWE, J. W. WILLIAMS.*Electrical Engineering:* C. R. VAIL, H. A. OWEN, JR.*Mechanical Engineering:* J. N. MACDUFF, V. L. KENYON, JR.*English:* G. C. HARWELL.*Mathematics:* F. G. DRESSEL.*Physics:* H. W. LEWIS.*Ex-officio:* President A. H. EDENS

Vice-President P. M. GROSS

DR. A. K. MANCHESTER.

COMMITTEE OF THE BOARD OF TRUSTEES ON ENGINEERING
AND RESEARCH

E. L. JONES, E. W. WEBB, B. E. JORDAN,

A. H. SANDS, JR., N. A. COCKE.

FACULTY COMMITTEES

Building: KRAYBILL, HAINES, MACDUFF, ROWE, SEELEY, VAIL.*Bulletin:* KRAYBILL, HARWELL, KENYON, PALMER, VAIL.*Engineering Publications:* ARGES, ARTLEY, HARWELL, REED.*Freshman Advisory:* KRAYBILL, ARTLEY, CALLESON, ELSEVIER, GARDNER, HAINES, LEWIS,
OWEN, PALMER, RABIN, VAIL, WILLIAMS.*Graduate Program:* SEELEY, MACDUFF, ROWE, VAIL.*Lecture:* MEIER, GARDNER, KENYON, KRAYBILL, WILLIAMS.*Library:* WILLIAMS, KALE, VAIL, WILBUR.*Undergraduate Projects:* REED, ELSEVIER, GARDNER, OWEN, PETERSON.*Schedule and Registration:* KRAYBILL, ELSEVIER, MCELDUFF, VAIL, WILLIAMS.*Student Activities:* KRAYBILL, ELSEVIER, KENYON, MEIER, OWEN, PETERSON.*Representatives to Undergraduate Faculty Council:* GARDNER, KRAYBILL, MACDUFF,
MEIER, REID, ROWE, SEELEY, VAIL.*Upperclass Advisers:* ARGES, KENYON, MACDUFF, MCKEEL, MEIER, THARP, WILBUR,
WILLIAMS, YOUNG.*Faculty Emeritus*

HAROLD CRUSIUS BIRD, Ph.B., C.E.

Professor Emeritus of Civil Engineering

1209 Virginia Avenue

WILLIAM HOLLAND HALL, A.B., A.M., B.C.E., M.S.C.E.

Professor Emeritus of Engineering

Apt. #3, Johnson Apts., 304 Watts St.

RALPH SYDNEY WILBUR, B.S. in M.E., M.E.

Professor Emeritus of Mechanical Engineering

1018 Demerius Street

FRANK NICHOLAS EGERTON, A.B., A.M., E.E.

Associate Professor Emeritus of Electrical Engineering

Brevard, N. C.

Faculty

- KIRO PETE ARGES (1953), B.S. in C.E., M.S. in C.E.
Assistant Professor of Civil Engineering 915 Lambeth Circle
- JOHN LESLIE ARILEY (1955), B.S. in E.E., M.S. in E.E., D. Eng.
Assistant Professor of Electrical Engineering 1805 Forest Road
- ROBERT NORMAN BRIGHAM (1956), B.E.E.
Lecturer in Electrical Engineering 2312 University Drive
- DONALD AMOS CALLESON (1955), B.S. in M.E.
Instructor in Mechanical Engineering 808 Third Street
- ERNEST ELSEVIER (1950), B.S. in M.E., M.S. in M.E.
Assistant Professor of Mechanical Engineering Rt. 1, Hillsboro, N. C.
- CHARLES DARBY FULTON, JR. (1950), B.E. in M.E., Sc.D.
Assistant Professor of Mechanical Engineering 1507 West Pettigrew Street
- WILLIAM HENRY GARDNER, JR. (1953), B.S. in C.E., M.Eng.
Assistant Professor of Civil Engineering 2108 Cole Road
- HOWARD N. HAINES (1943), B.S.
Assistant Professor of Civil Engineering 2732 Dogwood Road
- PAUL HARRAWOOD (1956) B.S. in C.E., M.S. in C.E.
Instructor in Civil Engineering 105 West Woodridge Drive
- *CHESTER FAY HWANG (1954), B.S. in M.E.
Instructor in Mechanical Engineering Apt. 9, Fifth St. and Markham Ave.
- VAN LESLIE KENYON, JR. (1945), B.S. in M.E., M.M.E.
Professor of Mechanical Engineering Rt. 2, Hillsboro, N. C.
- *JACOB FRANK KOENIG (1954), B.S. in E.E., M.S. in E.E.
Assistant Professor of Electrical Engineering 1700 Duke University Road
- EDWARD KREADY KRAYBILL (1939), B.S. in E.E., M.S.E., E.E.
Associate Professor of Electrical Engineering
Assistant to the Dean of Engineering 2726 Circle Drive
- GORDON CYRIL LAHEY (1956), B.S. in E.E.
Instructor in Electrical Engineering 29A Brookwood Gardens
 Burlington, N. C.
- RALPH ELTON LEWIS (1941), B.S. in M.E., M.S. in M.E.
Assistant Professor of Electrical Engineering 1401 Alabama Avenue
- JAMES THOMAS McKEEL (1956), B.E.E.
Instructor in Electrical Engineering Smith Apts., Watts Street
- JOHN NELSON MACDUFF (1956), B.S., M.M.E.
Professor of Mechanical Engineering
Chairman, Department of Mechanical Engineering 2733 Dogwood Drive
- OTTO MEIER, JR. (1934), B.S. in E.E., M.S., E.E.
Associate Professor of Electrical Engineering 916 Monmouth Avenue
- HARRY ASHTON OWEN, JR. (1951), B.E.E., M.S.E.
Assistant Professor of Electrical Engineering 1506 Woodburn Road
- AUBREY EDWIN PALMER (1944), B.S. in Engrg., C.E.
Associate Professor of Civil Engineering 2525 Highland Avenue
- JAMES EMMET PETERSON (1954), B.C.E., M.S.C.E.
Assistant Professor of Civil Engineering 1009 Cobb Street
- DAVID RABIN (1954), B.S. in M.E., LL.B., LL.M. (Pat.)
Instructor in Mechanical Engineering 538 Audubon Drive
 Greensboro, N. C.

* Resigned, August 31, 1956.

- FREDERICK JEROME REED (1935), M.E., M.S.
Professor of Mechanical Engineering 2203 Englewood Avenue
- ROBERT SEAMAN ROWE (1956), B.C.E., M.S., M.Eng., D. Eng.
Professor of Civil Engineering
Chairman, Department of Civil Engineering 1107 Urban Avenue
- WALTER JAMES SEELEY (1925), E.E., M.S.
James B. Duke Professor of Electrical Engineering
Dean and Director of Research, College of Engineering 1005 Urban Avenue
- WILLIAM ROWLEY SHAWVER (1956), B.S. in M.E.
Part-time Instructor in Mechanical Engineering 1324 Vickers Avenue
- *PAUL CLINTON STOTTELMYER (1953), B.S. in C.E., M.S. in Hyd. Engrg.
Assistant Professor of Civil Engineering 835 Louise Circle
- MEHMET TURHAN TANER (1956) M.S. in C.E.
Instructor in Civil Engineering 2822 Erwin Road
- ROBERT WORIH TAYLOR (1954), B.S. in M.E.
Part-time Instructor in Mechanical Engineering 1205 Sixth Street
- KENNETH JOHN THARP (1953), B.S. in C.E.
Assistant Professor of Civil Engineering 2610 Acadia Street
- ROBERT LEON THURSTONE (1953), B.S. in E.E., M.S. in E.E.
Part-time Instructor in Electrical Engineering Chapel Hill, N. C.
- PHILIP HAROLD TRICKEY (1956), B.S. in E.E., M.S. in E.E., E.E.
Lecturer in Electrical Engineering 112 West Lavender Street
- CHARLES ROWE VAIL (1939), B.S. in E.E., M.S., Ph.D.
Associate Professor of Electrical Engineering
Chairman, Department of Electrical Engineering 2730 Circle Drive
- LESLIE CLIFFORD WILBUR (1949), B.S. in M.E., M.S.
Assistant Professor of Mechanical Engineering Rt. 3, Hillsboro, N. C.
- JAMES WESLEY WILLIAMS (1937), A.B., B.S. in C.E., M.S.
Professor of Civil Engineering 206 Swift Avenue
- *WALLACE LEON WILLIAMS (1955), B.E.E.
Instructor in Electrical Engineering 921 Exum Street
- DAVID BRUCE YOUNG (1956), B.S. in E.E.
Instructor in Electrical Engineering 801 Third Street

Instruction in Non-Engineering subjects is given by members of the General Faculty listed in the *Bulletin of Undergraduate Instruction* and in the *Bulletin of the Graduate School of Arts and Sciences*.

Staff

- MRS. GEORGE F. KALE
Librarian 3325 Chapel Hill Road
- MRS. DOROTHY HOLT McELDUFF, A.B.
Recorder and Secretary to the Dean 100 Forest Wood Drive
- MRS. LEON S. BROOKS
Secretary, Electrical Engineering Department 904 Arnette Avenue
- MRS. WINSTON E. CRABTREE
Secretary, Mechanical Engineering Department 1006 Arnette Avenue

* Resigned, August 31, 1956.

MRS. JAMES P. ERWIN, JR. <i>Secretary, Civil Engineering Department</i>	411 North Gregson Street
LESTER BARHAM <i>Research Technician</i>	1103 Fifth Street
JOSEPH PHILIP EDWARDS <i>Laboratory Technician in Electrical Engineering</i>	1604 B Street
JOSEPH STEVENSON HOCUTT <i>Laboratory Technician in Mechanical Engineering</i>	Rt. 1, Hillsboro, N. C.
ALONZO GEORGE VAUGHAN <i>Laboratory Technician in Civil Engineering</i>	202 Adams Street
JOHN MARCELLUS VILAS <i>Research Assistant</i>	Couch Road, Chapel Hill, N. C.

Admission to the College



CANDIDATES may qualify for admission as members of the freshman class or as students with advanced standing. Since the enrollment is limited, the Committee on Admissions selects students who, in its judgment, are best qualified to benefit from the educational advantages which the College offers. The Committee bases its decision on the academic record of the candidate, on test scores, and on satisfactory evidence of good character and general fitness for college life at Duke. A personal interview with an officer of the University and a visit to the campus are of material benefit to the candidate and the Committee.

ADMISSION TO THE FRESHMAN CLASS: A candidate for admission to the freshman class must present at least 15 acceptable units of secondary-school credit. A unit of credit is allowed for a course of study pursued throughout an academic year in an accredited secondary school, provided five recitations a week have been held and the prescribed amount of work has been completed satisfactorily.

For admission to the College of Engineering seven of the 15 units must be in English (3 units), chemistry or physics (1 unit), algebra (2 units), and plane geometry (1 unit). The remaining eight units are elective. At least five of them must be in English, foreign language, history and social studies, mathematics, and science. It is recommended that these five be chosen from the following list:

English (in addition to the required 3 units)	1 unit
Algebra (in addition to the required 2 units)	$\frac{1}{2}$ to 1 unit
Trigonometry	$\frac{1}{2}$ unit
Solid Geometry	$\frac{1}{2}$ unit
Physics or chemistry or biology (in addition to the required unit)	1 to 3 units
Foreign languages	1 to 4 units
†History and social studies	1 to 4 units

The three additional units needed to make the total of fifteen may be chosen from those subjects for which the school allows credit toward graduation; but it is recommended that they also be chosen from the above list.

A graduate of an accredited secondary school who submits fifteen acceptable units of credit, who is recommended by his school principal,

† Candidates who do not present at least one acceptable unit of history must take history in college.

and who in all other respects meets the requirements of the Committee on Admissions may be admitted without examination. A candidate whose graduation is from a non-accredited school or about whom there may arise any other question as to qualification for admission may be required to take entrance examinations or such other tests as the Committee on Admissions may prescribe.

It is recommended that all candidates for admission to the freshman class take the Scholastic Aptitude Test of the College Entrance Examination Board or a similar program of tests administered on the Duke campus by the Duke University Bureau of Testing and Guidance. Details of the procedure to be followed in applying for either of these testing programs will be sent to each candidate for admission.

ADMISSION TO ADVANCED STANDING: A candidate for admission to advanced standing must have fulfilled the equivalent of the requirements for admission to the freshman class, must present official transcripts of all work completed in other institutions, and must have an honorable dismissal from each institution previously attended. Advanced standing candidates who have previously taken the Scholastic Aptitude Test of the College Entrance Examination Board should request the Board to send a report of their test scores to the Director of Admissions. All others are advised to take the Scholastic Aptitude Test or the program of tests administered by the Duke University Bureau of Testing and Guidance, as recommended for freshman candidates.

Credit for work completed at other institutions will be determined in relation to the curriculum requirements of the College of Engineering.

Credit for courses in science offered for advanced standing by a transfer from a junior college will be determined by the departments concerned.

Transfer credits are tentatively evaluated pending the completion of two semesters of work in residence. To validate provisional credits, the student must earn at least an average of C in a normal load of work. Transfer credit, in which grades of C or above have been earned, is rated at two quality points per semester hour when validated. Courses in which grades of less than C have been earned are not acceptable for transfer credit.

The maximum amount of credit acceptable from a junior college is 60 semester hours, exclusive of physical education. No credit is given for work completed by correspondence, and credit for no more than six semester hours is allowed for extension courses. Any extension work accepted must be specifically approved by the Dean of the College.

ADMISSION OF SPECIAL STUDENTS: Upon the approval of the Dean, students of mature age may be admitted for special work in such courses of instruction as they are qualified to take. They may not be admitted as candidates for a degree in a regular course unless they meet all normal requirements for admission.

ADMISSION PROCEDURE: Application for admission to the College of Engineering should be made to the Registrar, Duke University, Durham, North Carolina. Application forms and instructions will be sent to the candidate. It is the responsibility of the candidate to see that these forms are properly executed and, together with other requested material, sent promptly to the Office of Admissions.

Application prior to the final year of the secondary school course is not required. Formal steps looking toward admission should be initiated, however, early in the senior year and not later than February 1. Candidates for admission are requested to file all credentials by March 1. Candidates will be notified as decisions are made.

READMISSION OF FORMER STUDENTS: A student who, following withdrawal from the College, desires to return should apply to the Registrar. When applying for readmission the student should make a detailed statement of his activities since leaving Duke University.

WOMEN STUDENTS: Women students enrolled in the College of Engineering live on the Woman's College campus and are subject to the general regulations of the Woman's College.

Admission to Graduate School of Arts and Sciences



For admission requirements consult the *Bulletin of the Graduate School of Arts and Sciences*, which may be obtained by writing to the Dean, Graduate School of Arts and Sciences, Duke University, Durham, North Carolina.

Financial Information, Living and Dining Accommodations



FEES paid by the students cover only a part of the cost of their instruction and of the operations of the University. Income from endowment and contributions from the alumni, alumnae, and other public-spirited men and women meet the balance, which constitutes more than half the total cost.

Fees

A registration fee of \$20.00 is required of all new students. This fee is payable only once; it is not refundable. A room reservation deposit of \$25.00 is also required.* A tuition fee of \$225.00 and a general fee of \$75.00 are payable at the beginning of each semester. The general fee is in lieu of special fees usually charged for matriculation, use of laboratories, student health service, commencement, etc.

An advance deposit of \$25.00 is required of all students in residence at the time of spring registration in order to reserve a place in classes for the fall semester. This is applied toward payment of the general fee at the opening of the fall semester. The deposit will be refunded to students whom the University does not permit to return. Students who of their own volition fail to return are not entitled to a refund.

An advance deposit of \$25.00 is also required of old students who have been out of school for one or more semesters and have been accepted for readmission. It is applied toward payment of the general fee for the semester of readmission. The advance deposit is paid at the time of notification of acceptance and is not refundable.

An Air Force ROTC deposit of \$20.00 is required of students enrolling in Air Science to cover possible loss of military equipment issued to them. This deposit is refunded to the student upon return of issued equipment.

Refunds of tuition and other fees are made to students who withdraw within 14 days after the beginning of the semester, with the exception of the advance deposits listed above. On and after the fifteenth day no refunds of fees are made. Stipulations governing the refunding of the \$25.00 room deposit are explained in the sections on Living Accommodations.

* After a room is reserved, the deposit will not be refunded to accepted applicants who fail to enter the University.

Students who register during the regular academic year for no more than two courses with a maximum credit of eight semester hours are classified as special students. They are charged a registration fee of \$5.00 for each course, and \$15.00 for each semester hour of course credit. Students taking nine or more hours are charged full fees.

Students paying full fees may audit one or more courses without charge, provided they have the consent of the instructor. Students not paying full fees are charged \$10.00 for each audited course. Auditors submit no daily work, take no examinations, and receive no credit.

Students are entitled to one transcript free of charge. Additional copies are supplied at \$1.00 each. Records are not released when the Treasurer's Office reports an unpaid account.

Students may have their bills sent to parents or guardians provided the Treasurer has been notified in writing beforehand. Failure of a student or of a parent or guardian to pay bills on the dates scheduled will debar the student from class attendance until his account is settled in full; subsequent withdrawal does not entitle him to a refund. No student is considered by the Faculty as a candidate for graduation until he has settled with the Treasurer for all his indebtedness to the University. A student who has not settled all his bills with the Treasurer is not allowed to stand the final examinations of the academic year.

Estimated Expenses for an Academic Year

Incidental expenses depend upon the tastes and habits of the individual, but the actual necessary expenses for an academic year are as follows:

	<i>Low</i>	<i>Moderate</i>	<i>Liberal</i>
Tuition	\$ 450.00	\$ 450.00	\$ 450.00
General Fee	150.00	150.00	150.00
Room Rent	175.00	175.00	225.00
Board	450.00	500.00	525.00
Laundry	30.00	40.00	50.00
Books	30.00	40.00	50.00
	<u>\$1285.00</u>	<u>\$1355.00</u>	<u>\$1450.00</u>

The actual fees and expenses necessary for one year in residence as a student in the College of Engineering need not exceed \$1285.00.

Student Aid

Duke University is interested in students with ability and ambition. It is the aim of the University Scholarship Committee and others affiliated with the Student Aid Program to provide, insofar as possible, the financial assistance required by worthy students. This assistance takes various forms. The actual cost to the University for each student

is more than twice the amount received from the student. The deficit is paid out of contributions and income from endowment. Scholarships and prizes enable students with inadequate resources to reduce the amount payable to the University. Loans are made available, and through the Student Employment Offices part-time jobs are arranged. Through the Student Aid Program an earnest effort is made to eliminate the economic status of the student as a criterion for admission.

Scholarships, Scholastic Awards, Loans, Student Employment, and Graduate Assistance

UNDERGRADUATE SCHOLARSHIPS

ENGINEERING SCHOLARSHIP FUND

Established by gifts of various persons; to be used for scholarship aid to engineering students.

THOMAS R. MULLEN, JR. SCHOLARSHIP FUND

Established April 5, 1949, by gift of T. R. Mullen in memory of his son; the income to be used for scholarship assistance to students in the College of Engineering. Preference is to be given students who are children of employees of the Lehigh Structural Steel Company or others nominated by the Company. Several awards are available each year.

JONES SCHOLARSHIP FUND

Established 1951 by Edwin L. Jones, Sr., '12; Annabel Lambeth Jones, '12; Edwin L. Jones, Jr., '48; Lucille Finch Jones; and the J. A. Jones Construction Company in memory of James Addison Jones and Raymond A. Jones; a portion of the income to be used for scholarship aid to worthy and qualified students in the College of Engineering.

CARBIDE AND CARBON CHEMICALS CORPORATION SCHOLARSHIP IN MECHANICAL ENGINEERING

Established in 1953 by the Carbide and Carbon Chemicals Company. One award covering the tuition and fee charges and a \$200.00 stipend for living expenses is made annually to a senior in the mechanical engineering curriculum. The recipient is selected on the basis of the excellence of his record as a student.

WESTINGHOUSE ACHIEVEMENT SCHOLARSHIP IN ENGINEERING

Established 1954 by the Westinghouse Educational Foundation. One award of \$500.00 per year is made to a junior in electrical or mechanical engineering on the basis of high academic achievement and demonstrated qualities of leadership. Selection of the recipient is made by representatives of the faculty of the College of Engineering and the University Scholarship Committee.

AMERICAN VISCOSE CORPORATION SCHOLARSHIP IN ENGINEERING

Established in 1954 by the American Viscose Corporation. One award of \$500.00 per year is made to a junior or senior in the College of Engineering. Selection of the recipient is made on the basis of academic record and contributions to the program of the College.

Duke University participates in several other industry scholarship programs. Several of these awards for which freshmen may apply are assigned to engineering students annually although they are not restricted to students in this field of study. Among the available awards are the Union Carbide Research Scholarships, the General Motors

Scholarships, the Texas Company Scholarships, and the Western Electric Company Scholarships.

Students who wish additional detailed information about these awards and other scholarship, loan, or employment opportunities should refer to the *Bulletin of Undergraduate Instruction* or write to the Executive Secretary, The Scholarship Committee, Duke University, Durham, North Carolina.

GRADUATE ASSISTANCE. The Department of Electrical Engineering makes available to qualified graduate students a number of half-time instructorships that pay \$2400 for nine months. A holder of one of these instructorships may carry three-fifths of a normal load of graduate courses. For further information concerning these instructorships, write to: Chairman, Department of Electrical Engineering, Duke University, Durham, North Carolina.

For information concerning other forms of financial assistance available to graduate students see the *Bulletin of the Graduate School of Arts and Sciences*.

Living Accommodations for Men

Undergraduate men are required to live in the Residence Houses unless they are married, or are living with parents or relatives. Any exception must be approved by the Dean of Men.

The rental charge for a single room is \$225.00 for the academic year, or \$112.50 each semester. The rental charge for the double room is \$350.00 for the academic year, or \$175.00 for each occupant, or \$87.50 for each occupant each semester. Rooms are rented for a period of not less than one semester unless by special arrangement with the Housing Bureau. For a shorter period of occupancy without special arrangement, the rate is \$1.00 per day with a minimum charge of \$25.00.

Room reservations are made with the Housing Bureau only after official acceptance for admission to the University. A \$25.00 room deposit is required of each applicant before a room reservation is made. The initial room deposit is effective during the student's residence in the University if his attendance is continuous in regular academic years. This deposit will be refunded to resident students under the following conditions:

- a. Within thirty days after the student has been graduated.
- b. Upon withdrawal from the University, provided written notice is received in the Housing Bureau by August 1, for cancellation of a reservation for the fall semester; and not later than January 15, for cancellation of a reservation for the spring semester.

- c. When the reasons requiring withdrawal are beyond the students' control.

No refund is made until the occupant has checked out of his room through the Housing Bureau and has settled all of his accounts with the Treasurer.

A resident student, in order to retain his room for the succeeding academic year, must make application at the office of the Housing Bureau for confirmation of the reservation in accordance with the plan that is published during the school year.

Any exchange of rooms must be arranged at the Housing Bureau. A charge of \$2.00 will be incurred for room changes made after September 1 in the fall and February 15 in the spring. Persons exchanging rooms without the approval of the Housing Bureau will be subject to charges for both rooms.

The authorities of the University do not assume responsibility for the persons selected as roommates. Each student is urged to select the roommate when the room is reserved.

Duke University desires to provide for its students a residential environment conducive to academic achievement, the development of high ideals, and sound character. The institution asks and believes that each student will cooperate in achieving these aims by arranging his personal belongings in an orderly manner, by caring for the buildings and furniture as he would do in his own home, and by observing a code based on gentlemanly behavior in an educational environment which demands respect for all residents. Regulations governing the occupancy of rooms will be supplied directly from the Housing Bureau when the room reservations are made. Occupants are expected to abide by these regulations.

For further details concerning living accommodations for men, see the *Bulletin of Undergraduate Instruction* or the *Bulletin of the Graduate School of Arts and Sciences*.

Living Accommodations for Women

Undergraduate women are required to live in Woman's College residence houses unless they are married or are living with parents or close relatives in the City. In the case of a mature student, the Dean may make an exception under special circumstances.

For details concerning living accommodations for women, see the *Bulletin of Undergraduate Instruction* or the *Bulletin of the Graduate School of Arts and Sciences*.

Dining Service

The dining facilities on the West Campus include three cafeterias with multiple-choice menus, and the Oak Room where full meals and

a la carte items are served. The cost for the academic year ranges from \$400.00 to \$500.00, depending on the tastes of the individual. On the East Campus dining halls are located in the Union and in Southgate. Resident women may not board elsewhere than at these halls. The charge for board is \$200.00 per semester, payable at the time of registration.

In the Men's Graduate Center there is a cafeteria with multiple-choice menus and a Coffee Lounge where sodas and sandwiches are served from 11:30 A.M. to 11:00 P.M. The prices in these dining rooms are the same as on the West Campus.

Reserve Officers Training Corps



THROUGH the Naval and Air Force Reserve Officers Training program the University is cooperating with the Department of Defense in the effort to provide a steady supply of well-educated officers for the active and reserve forces of the nation.

The Naval Reserve Officers Training Corps

There are two basic programs through which students can qualify for Naval commissions upon graduation: one, the Regular Naval Reserve Officers Training Corps program, provides a maximum of four years in the University largely at government expense, followed by a temporary commission in the regular Navy or Marine Corps; the other, the Contract program, leads to a commission in the Naval Reserve or the U. S. Marine Corps Reserve.

THE REGULAR STUDENT—Scholarships are awarded on the basis of an annual nation-wide test and selection procedure. Students selected are appointed Midshipmen, USNR, and receive for a maximum of four years tuition, fees, and textbooks at government expense plus retainer pay at the rate of \$600 per year. The regular midshipman may take any course leading to a baccalaureate or higher degree with certain exceptions, e.g., pre-medicine and medicine, pre-theology and theology, music and art. His academic program must include 24 semester hours of naval science and by the end of his sophomore year he must complete a minimum of one year of college physics. In addition, three semester hours of trigonometry will be required if he has not previously completed such a course in a secondary school. The Regular goes on two summer training cruises aboard ship and receives aviation and amphibious indoctrination at naval shore stations the third summer.

Upon graduation he must accept a commission as Ensign, USN, or Second Lieutenant, USMC, if offered, after which he serves on active duty with the fleet for four years, if required by the Secretary of the Navy. Toward the end of the required active duty, he may request retention in the regular Navy or Marine Corps, or at his option be commissioned in the Reserve. Officers commissioned in the Reserve under such an option may be released to inactive duty except in times of national emergency.

THE CONTRACT STUDENT—The contract student is selected

from those regularly enrolled in Duke University who desire to qualify for a commission in the Naval or Marine Corps Reserve while pursuing their normal courses of study. There is no restriction on the course of study which a contract student may pursue. He must include in his academic program trigonometry (if not successfully completed in secondary school), and 24 semester hours of naval science. He has the status of a civilian who has entered into a mutual contract with the Navy and is not eligible for the benefits and retainer pay received by regular Midshipmen. He is paid a subsistence allowance during his last two years in the NROTC, however, amounting currently to 90 cents per day. He goes aboard ship for one summer training cruise, normally between his junior and senior years. Upon graduation, he is commissioned in the Naval or Marine Corps Reserve and, if needed, reports for two years' sea service. Upon completion of the minimum active service requirements he may request transfer to the regular component of the Navy or Marine Corps, retention on active duty as a reservist, or transfer to the inactive reserve for a period of four years.

Both Regular and Contract midshipmen are deferred from Selective Service by virtue of their commitment to serve on active duty after graduation. The Navy furnishes necessary uniforms and equipment. Uniforms are worn only on drill days or other special occasions when prescribed by the Professor of Naval Science. Regular and Contract students receive the same instruction and wear the same uniforms. No distinction is made between the two, except in the handling of their records.

The Air Force Reserve Officers Training Corps

The unit functions as a regular department of instruction known as the Department of Air Science. It selects and trains students who possess the requisite character, intelligence, desire, and sense of duty to become Air Force officers.

For enrollment in the Basic Course (freshman and sophomore years) the student must: be a male citizen of the United States; be physically qualified under standards prescribed by the Air Force (due allowance will be made for defects which are correctible prior to the student's eligibility for appointment as a commissioned officer); be accepted by the institution as a regularly enrolled student; be not less than 14 years of age and not have reached 23 years of age at the time of enrollment; have successfully completed such general survey and screening tests as may be prescribed; and must have signed a loyalty certificate with the U. S. Government. Students initially entering the University who have had previous preparatory or high school military training are normally accepted in Basic Air Science at the same academic level as that in which they are accepted by the University.

For enrollment in the Advanced Course (junior and senior years) the student must have successfully completed the Basic Course or have had at least one year of honorable service in the Armed Forces of the United States; must have executed a written agreement with the government to complete the Advanced Course *and accept a commission in the United States Air Force Reserve*, contingent upon remaining in school, and to attend Advanced Summer Training at the time specified; must have agreed to take orientation flights when offered; must be less than 28 years of age at the time of graduation; must have successfully completed such general survey and screening tests as may be prescribed; and must be selected by the Professor of Air Science and the appropriate authority of the University.

Students in the Basic Course may be deferred from Selective Service upon satisfactory completion of one semester of Basic Air Science. Advanced students are eligible for deferment as soon as they are enrolled formally in the Advanced Course. Selection for deferment is made by a board composed of representatives from the AFROTC and the University.

All uniforms, texts, and training equipment required for the Air Science Course are furnished at government expense, and students are paid a total of approximately \$600.00 for the two years of the Advanced Course.

Since the primary need of the Air Force is for flying officers, the great majority of students selected for Advanced Air Science must be physically qualified and desirous of applying for flying training after graduation. Upon graduation and completion of the Advanced Course, selected students will be offered commissions as Second Lieutenants in the Air Force Reserve. Reserve officers who desire lifetime careers in the Regular Air Force may apply for regular commissions after serving on active duty for one year. An Air Science IV student who maintains an academic average in the upper quarter of all seniors in his major is eligible for designation as a Distinguished AFROTC Cadet and later, a Distinguished AFROTC Graduate. A designee, if fully qualified, will receive a regular commission upon graduation.

The Bureau of Testing and Guidance



THE University maintains a Bureau of Testing and Guidance which provides a program of educational, vocational, and personal counseling for students. In addition, the Bureau administers special group testing programs for University schools and departments and serves as the local testing center for a wide variety of national

testing programs. The Bureau also carries on programs of research in the field of measurement and counseling. Although the counseling, testing, and research services of the Bureau are designed primarily to meet the needs of the students, the faculty, and the staff of Duke University, these services are made available to individuals and organizations outside the University as its facilities permit. Requests for further information should be addressed to the Director, Bureau of Testing and Guidance, Duke University, Durham, N. C.

Appointments Office



THE APPOINTMENTS OFFICE is a service agency designed to aid graduates in solving the problem of post-college employment. Its primary function is to serve as an intermediary between students and prospective employers. It acquaints students with possibilities in business and professional fields, it assembles comprehensive records on each registrant and makes these records available to appropriate representatives, and it arranges interviews with prospective employers. The data assembled for individual records include academic achievement, training, experience, extracurricular activities, and honors. On occasion additional information of a special nature is secured. Confidential letters of recommendation are incorporated in the file of each registrant. The Office initiates contacts for students or cooperates with students who make contacts through personal efforts or through various departments of the University. It aids the registrant in directing his search to a field appropriate to his aptitude, training, and interest.

There are two major divisions of the Office: the Commercial Division, which handles all matters involving contacts with business and professional areas not related to formal education; and the Educational Division, which concerns itself with teaching and school administration positions at all levels. Students and alumni may register with either or both of these divisions.

The Office receives more calls for qualified personnel than it can supply from its registrants. It is to the mutual advantage of the students and the Office that a complete record of registrants be assembled by the fall of the senior year.

Undergraduate Registration and Academic Regulations*



ORIENTATION PROGRAM: All freshmen and transfer students are required to participate in the Activities of Orientation Week. The program includes general ability, achievement, and placement tests, orientation lectures, physical examinations, social events, special religious services, registration, and matriculation.

The University considers the planning of a course of study to be of primary importance. Perhaps the most significant moments of Orientation Week, therefore, are those which a new student spends with his faculty adviser. With the results of the several tests which all freshmen take available to them, the adviser and the student plan a course of study adapted to the ability, achievements, and goals of the individual student. New students who miss the whole or a part of the Orientation Program place themselves at a serious disadvantage at the very outset of their college career.

ENROLLMENT AND REGISTRATION: Students in residence are required to submit to the Dean, not later than the date of the spring registration, cards showing their selection of courses for the following year. An advance deposit of \$25.00 is required before the card may be submitted. These cards, approved by the Dean, are filed for permanent record in the Central Records Office. Students who do not select their courses for the following year at the time appointed must be readmitted to the college by reapplication to the Director of Admissions. Students whose course cards have been approved in the spring may enroll by mail during the summer. The same regulations, with the exception of the advance deposit, apply to registration for the spring semester.

Students who register in either semester at a date later than that prescribed in the calendar of this Bulletin must pay to the Treasurer a fee of \$5.00. They are counted as absent in the work they have missed in the courses to which they are admitted, and these absences carry the same penalty as do other absences from the course. Changes in courses for reasons not arising within the University require a payment of \$1.00 for each change made. No course may be elected later than one week after the opening of the semester, and no student may be admitted late to any class without an enrollment card.

* For graduate registration and academic regulations, consult *Bulletin of The Graduate School of Arts and Sciences*.

General Academic Regulations

QUANTITY CREDIT AND COURSE LOAD: The term of credit used is the semester hour, which signifies one recitation a week throughout the semester. Three hours of laboratory work are equivalent to one hour of class work. Two semesters of seventeen weeks each constitute the academic year. For the degree of Bachelor of Science in Engineering, credit for 148 semester hours is required.

In the College of Engineering the normal load is 17-19 semester hours, exclusive of physical education. No student is permitted to take less than 14 semester hours of work without special permission from the Dean or to take more than the normal load of work unless his average grade in the preceding semester is higher than C.

QUALITY CREDIT: The requirements for the degree are computed in semester hours and in quality points. Quality points are earned by a student on the basis of his grades: for an A he receives four quality points for each semester hour; for a B, three quality points for each semester hour; for a C, two quality points for each semester hour; for a D, one quality point for each semester hour; for an F, no quality points. Credit for at least 296 quality points is required for a degree in Engineering.

REQUIREMENTS FOR CONTINUATION IN COLLEGE AND FOR GRADUATION FROM COLLEGE: To continue in college and to graduate a student must, in addition to the requirements listed elsewhere in this Bulletin, pass a minimum number of semester hours, achieve a specified quality point ratio, and in the case of graduation earn a minimum number of quality points. The quality point ratio is calculated by dividing the accumulated number of quality points earned by the accumulated number of semester hours carried (not semester hours passed). These requirements are listed in the following table:

<i>For continuation from</i>	<i>The minimum requirement is</i>
The first to the second year	18 s.h. credit and a q.p.r. of 1.2
The second to the third year	42 s.h. credit and a q.p.r. of 1.4
The third to the fourth year	66 s.h. credit and a q.p.r. of 1.6
The fourth to fifth year, if needed	90 s.h. credit and a q.p.r. of 1.75
<i>For graduation from</i>	<i>The minimum requirement is</i>
Trinity and the Woman's College	124 s.h., 248 q.p. and a q.p.r. of 1.9
The College of Engineering	148 s.h., 296 q.p., a q.p.r. of 1.9 and a q.p.r. of 2.0 in senior work*

The minimum standards for continuation in the College of Engineering are the same as those listed above, but since the semester hour requirement for graduation in engineering exceeds the requirement of the liberal arts colleges, the standards may be adjusted to meet the special requirement of the College. Moreover, application of these

* A minimum average grade of C in all courses taken in the last year, combined with all courses designated for the senior year in the particular engineering curriculum.

standards is based on the courses required in the engineering curriculum.

REPORTS: Reports on proficiency in academic work are sent to parents or guardians after the examinations at the end of each semester. In addition, reports on freshmen are mailed at each mid-semester period.

DISMISSAL: In addition to the qualitative standards listed above, students must pass a minimum number of hours each semester. Freshmen must pass at least 6 semester hours of work in their first semester and 18 semester hours in their first year; all other students must pass at least 9 semester hours each semester. The University may require a student whose record is considered unsatisfactory to withdraw although he has met the minimum requirements set forth in this paragraph.

ACADEMIC CLASS STANDING: *To be classified as a sophomore*, a student must have to his credit at least 30 semester hours and 60 quality points and must have passed certain specially designated courses of the freshman engineering curriculum. *To be classified as a junior*, he must have to his credit at least 68 semester hours and 136 quality points and must have passed certain specially designated courses of the sophomore departmental engineering curriculum. *To be classified as a senior*, he must have to his credit at least 106 semester hours and a quality point ratio of 1.75 and must have passed certain specially designated courses of the junior departmental engineering curriculum.

RESIDENCE REQUIREMENT: A minimum of 36 semester hours of senior-level work in the College of Engineering must be earned in residence. A student who meets this requirement but who still lacks six to eight semester hours in final fulfillment of requirements may take this work in another institution of approved standing provided the course is approved by the chairman of the department concerned and by the Dean.

Grading, Attendance, and Examinations

GRADING: Final grades are reported to indicate passing or failing work in designated courses. Final grades are:

(1) *Passing.* Passing grades are A, exceptional; B, superior; C, average; and D, inferior.

(2) *Failing.* A grade of F indicates that the student has failed the course and that in order to receive credit for the course he must repeat the work in class.

Special symbols are used to indicate the following:

(1) *Absence from the final examination.* In all cases in which the student is absent from a final examination, he receives an X in place

of a final grade. If he does not present an acceptable explanation for his absence to the appropriate dean's office within forty-eight hours after the scheduled time for the examination, the X is converted to an F. A student absent from examination, if the absence has been excused by the dean, may receive an examination upon payment of a fee of \$5.00 to the Treasurer of the University. The instructor concerned arranges for examination in cases where absences are excused. An X must be cleared by the end of the semester following the examination missed.

(2) *Incomplete work.* If because of illness or other emergency a student's work in a course is incomplete, he may receive an I for the course instead of a final grade. Incomplete courses must be completed before the close of the succeeding semester; otherwise, the I is recorded as F and the course must be repeated in class if the student is to receive credit for it. In case a student whose work is incomplete is also absent from a final examination, he receives an X for the course.

(3) *Withdrawal.* The letter W is used to indicate official withdrawal from a course. If a student drops a course without permission from the dean, the grade for that course is recorded as F. If he drops with permission a course in which he is failing, the grade for that course is recorded as F unless, in the judgment of the dean, circumstances do not justify this penalty.

ATTENDANCE: Regular and punctual attendance in class work is expected of all students. Weekly reports of all absences, irrespective of class standing, are made by each instructor and filed in the dean's office. No instructor has the authority to excuse a student from class attendance; it is his duty to report all absences and tardies.

The requirements for continuation in college and for graduation from college emphasize the desirability of assumption by the student of responsibility for class attendance. Controls are exercised, therefore, during the first two years of college residence. Thereafter, full responsibility is placed on the student.

(1) *Regulations applicable during the first two years of college residence:*

One unexcused absence per semester hour without penalty is allowed for personal obligations. Sophomores who in a normal schedule make averages of B or above in the preceding semester will be allowed two absences per semester hour for personal obligations, but will in all other respects be subject to the same regulations as other students.

The first three tardies in a given course are counted as one absence. Thereafter, each additional tardy is counted as one additional absence.

Absences due to illness when certified by a proper medical official will be excused. Absences due to authorized representation of the

University may be excused. Officials in charge of groups representing the University are required to submit names of those persons to be excused to the appropriate dean's office forty-eight hours in advance of the hour when their absences are to commence. Absences due to individual and personal reasons will not be excused.

All absences immediately before and after announced holidays are counted as regular absences and they result in a loss of two quality points for each absence in each class. Unexcused, consecutive absences, whether excessive or not, result in the loss of quality points as in the case of unexcused, excessive absences. Each excessive or consecutive absence results in the loss of quality points as follows: one quality point for the first absence, two additional for the second, and three additional for the third. When the third unexcused, excessive or consecutive absence occurs, the student is debarred from the course with a loss of six quality points and an F in the course. When the student has incurred twelve absences, excused and unexcused, in any course he is required to drop the course unless the instructor and the dean concerned grant special permission for him to continue in the course.

When a student's course load is reduced, on account of excessive absences, to less than 12 semester hours, he is required to withdraw from the University.

(2) Regulations applicable after two years of college residence:

Responsibility for punctual and regular attendance is placed on juniors and seniors. However, for absences before and after announced holidays two quality points are deducted for each absence in each class. Instructors are expected to refer to the Dean for appropriate action any student who in their opinion is causing his work or that of the class to suffer by virtue of absences or tardies.

EXAMINATIONS: Final examinations are held in all subjects in January and May.

Deficiencies in English Composition

Any student who must take English I and whose score on the English placement test indicates that he is not ready for English I must earn a passing grade in English I before being permitted to enter English I.

Whenever the work of a student in any course is unsatisfactory because of errors in English, the instructor may report the student to the Dean, who will require him to enroll in remedial English until, in the opinion of the Remedial Laboratory, the deficiency is removed.

All instructors are requested to advise their students each semester concerning this regulation.

Activities, Honors, Prizes



Activities

STUDENT BRANCHES OF ENGINEERING PROFESSIONAL SOCIETIES

The three Departments of the College of Engineering support student branches of the following national professional engineering societies:

American Institute of Electrical Engineers, American Society of Civil Engineers, American Society of Mechanical Engineers.

ENGINEERS' STUDENT COUNCIL

The Engineers' Student Council, composed of approximately 20 members from the various organizations and classes in the engineering student body, coordinates the activities of all student organizations in the College of Engineering. The Council acts to represent the interests of the students in their relationships with the public, the faculty, and the administration. The Council is responsible for such activities as the Engineers' Show, Christmas decorations, homecoming displays, supervision of the student Lounge, and social events.

ENGINEERING STUDENT PUBLICATION

The DukEngineer, official student-published magazine of the College of Engineering which appears twice each semester, contains articles on technical and semi-technical topics and other matters of interest in the College.

ENGINEERS' RADIO ASSOCIATION

Membership in the Engineers' Radio Association is open to all students of the College of Engineering who have an interest in amateur radio. The Association operates amateur radio station W4AHY and conducts code and theory classes for members who desire to obtain a Federal Communications Commission license.

ENGINEERING LECTURE SERIES

In addition to his participation in the student branches of the national professional engineering societies, the student has the opportunity of additional development through the *Engineering Lecture Series*. The general function of the series is to provide stimulating lectures by outstanding speakers.

Objectives of the *Lecture Series* are as follows:

- a. To evaluate the historical foundations of engineering and the progress of science in the useful arts.
- b. To stimulate and inspire engineering undergraduates by acquainting them with significant developments at the forefront of engineering science; and to appeal to engineers and scientists from the University and the Community.
- c. To provide engineering undergraduates with a comprehensive view of the interdependence of engineering and related fields.
- d. To bring to the attention of engineering undergraduates areas of engineering and science beyond those normally encountered.
- e. To assess the impact of engineering activity on science.

GENERAL ACTIVITIES OPEN TO ENGINEERS

Air Force Club; Arnold Air Society; Commodore Club (NROTC Social Organization); Interdormitory Council; Pep Board; Publications Board; Radio Council; Student Union Board of Governors; The Young Men's or Young Women's Christian Association; Debate Council; Duke Players; Duke University Church (Interdenominational); Duke University Handbook and Directory; Freshman Advisory Councils; Hoof 'n' Horn Club; Interfraternity Council; Intramural Athletic Department; Pegram Chemistry Club; Shoe and Slipper Club; Student Religious Council; Town Boys' or Girls' Club; Young Democrats Club; Young Republicans Club; Chamber Orchestra; Concert Band; Marching Band; Symphony Orchestra; Madrigal Singers; Men's or Women's Glee Club; The University Chapel Choir; *The Archive* (monthly); *Chanticleer* (annual); *Chronicle* (semiweekly); *Duke Peer*; The Student Broadcasting System (WDBS).

NATIONAL SOCIAL FRATERNITIES

Alpha Tau Omega; Beta Theta Pi; Delta Sigma Phi; Delta Tau Delta; Kappa Alpha; Kappa Sigma; Lambda Chi Alpha; Phi Delta Theta; Phi Kappa Psi; Phi Kappa Sigma; Pi Kappa Alpha; Pi Kappa Phi; Sigma Alpha Epsilon; Sigma Chi; Sigma Nu; Sigma Phi Epsilon; Tau Epsilon Phi; Theta Chi; Zeta Beta Tau.

ENGINEERING HONOR SOCIETIES

Tau Beta Pi—engineering national honor society—Gamma chapter of North Carolina.

Eta Kappa Nu—electrical engineering national honor society—Duke University Branch of Eta chapter.

Pi Tau Sigma—mechanical engineering national honor society—Pi Iota chapter.

Order of St. Patrick—honor society recognizing leadership in engineering student activities.

GENERAL HONORARY SOCIETIES

In addition to the national engineering student honorary societies, students of the College of Engineering are eligible for membership in the following national honorary societies:

Phi Beta Kappa (Scholarship); *Sigma Xi* (Scientific Research); *Omicron Delta Kappa* (Leadership—Men); *Phi Eta Sigma* (Freshman Scholarship); *Pi Mu Epsilon* (Mathematics); *Sigma Pi Sigma* (Physics); *Sigma Delta Pi* (Spanish); *Tau Kappa Alpha* (Forensic); *Tau Psi Omega* (French); *Theta Alpha Phi* (Dramatic); *Delta Phi Alpha* (German).

Local honorary societies for which engineers are eligible include: *Red Friars* (Leadership); *Beta Omega Sigma* (Sophomore Leadership).

Honors

GRADUATION WITH HONORS

To be eligible for Honors, a student must earn, during the year, credit for at least the minimum academic load permitted by the College. All semester hours on which a student receives a grade are counted in the determination of Honors. Students in the freshman, sophomore, and junior classes who earn an average of at least three and one-half quality points per semester hour are given Honors.

Students who have completed a minimum in residence of ninety semester hours in Duke University are eligible for general Honors at graduation. Those who earn an average of at least three and one-half quality points per semester hour are recommended for a degree *magna cum laude*. Those who earn an average of at least three and three-fourths quality points per semester hour are recommended for a degree *summa cum laude*.

GRADUATION WITH DEPARTMENTAL DISTINCTION

Graduation with Distinction in Civil, Electrical, or Mechanical Engineering is awarded to the student who in the opinion of the department and of a special committee of the faculty has demonstrated exceptional achievement in the area of his special interest.

Prizes

The Tau Beta Pi Prize: The North Carolina Gamma Chapter of Tau Beta Pi, engineering national honor society, awards each year a suitable prize, such as an engineering handbook, to a sophomore student in engineering for outstanding scholastic achievement during the freshman year.

The Milmow Prize: This prize, consisting of one year's subscription to the *Electrical World*, is awarded each year to that student from North or South Carolina graduating in the Department of Electrical Engineering, who, in the opinion of the faculty of that department and as shown by his grades, has made the most progress in electrical engineering during his last year in college.

Julia Dale Prize in Mathematics: This is a prize of books given annually to the undergraduate who shows the greatest proficiency in the study of the calculus.

The William Senhauser Prize: This prize is given by the mother of William Senhauser in memory of her son, a member of the class of 1942, who lost his life in the Pacific Theatre of War on August 4, 1944. The award is made annually to the sophomore or junior in Trinity College or the College of Engineering whose has made the greatest contribution through participation and leadership in intramural sports. The winner of this prize is chosen by a committee selected by the President of the University.

The Degree of Bachelor of Science in Engineering



THE studies in the College of Engineering are designed for students who are preparing for civil, electrical, or mechanical engineering as a profession. These studies lead to the following degrees: B.S. in C.E., B.S. in E.E., and B.S. in M.E. All curricula of the College are fully accredited by the Engineers' Council for Professional Development.

Uniform Requirements

Each of these degrees requires 148 semester hours of work, four of which are in physical education.

The curriculum of each department consists of three components: (1) a freshman program common to all three departments, (2) certain general courses throughout the remaining three years, (3) special courses in the specific department. The general courses are described below. The special program of each department and a description of the courses it offers are given in the section of this Bulletin devoted to that department.

Air Force Reserve Officers' Training Corps and Naval Reserve Officers' Training Corps students who are majoring in engineering take the standard programs of their departments of specialization with certain exceptions that are noted under the respective departments.

The Degree of Master of Science



Through the Graduate School of Arts and Sciences, the Department of Electrical Engineering offers graduate work leading to the Master of Science degree. Details of this program are given in the section of this Bulletin that deals with the Department of Electrical Engineering.

General Courses of Instruction



Required Nonengineering Subjects

CHEM. 1-2. GENERAL INORGANIC CHEMISTRY.—Lectures, recitations, and laboratory work on the elementary principles of chemistry and on the occurrence, preparation, properties, and uses of the elements and their compounds. One lecture, two recitations, and three laboratory hours, throughout the year. 8 s.h.

ECON. 51-52. PRINCIPLES OF ECONOMICS.—For sophomores. 6 s.h.

ENGL. L. ENGLISH FUNDAMENTALS.—Required of freshmen whose scores on the placement tests indicate that they are not ready for English 1. Students who fail in English L must repeat the course. Students who have earned credit in English L must also take English 1 and 2. 3 s.h.

ENGL. 1-2. ENGLISH COMPOSITION.—Required of all freshmen. 6 s.h.

ENGL. 55, 56. REPRESENTATIVE WRITERS.—The following works are studied in the first semester: Chaucer's Prologue to *The Canterbury Tales* and at least two tales, Shakespeare's *1 Henry IV* and *King Lear* and one other play, John Donne's poems, Milton's *Paradise Lost* (selections) and some of the shorter poems; in the second semester: Pope's *Poems* (selections), Fielding's Joseph Andrews, Keats's *Poems and Letters*, Arnold's *Selected Poetry and Prose*, Dickens's *Bleak House*, Yeats's *Collected Poems*, Shaw's *Saint Joan*, and a twentieth-century novel.

ENGL. E 93. WRITTEN AND ORAL COMMUNICATION FOR ENGINEERS.—Emphasis will be placed on the writing of business letters, technical reports, and articles for submission to technical journals. Approximately one third of the course will provide training in the oral presentation of various materials. Open to non-engineering students only upon consent of the instructor. Prerequisite: English 1 and 2. 3 s.h.

ENGL. 151. ESSENTIALS OF PUBLIC SPEAKING.—A basic course designed to give the poise necessary to speak freely before an audience. Particular attention on speech materials and oral presentation. 3 s.h.

HIST. E1-2. THE UNITED STATES IN THE WORLD TODAY.—Designed for students in the College of Engineering. First semester: the rise of national states in Western Europe and other circumstances attending the discovery and settlement of the New World; the foundation of American institutions; the establishment of the Federal Republic; the frontier, the westward movement, and contemporary international development; the Civil War; the growth of industry and its influence on society; the Spanish-American War and the emergence of the United States as a world power. Second semester: the growing interdependence of the Western Nations in the twentieth century; their influence throughout the world; the participation of the United States in the World Wars, and the resulting problems of today. 6 s.h.

MATH. 1. INTERMEDIATE ALGEBRA.—Elementary topics, factoring, fractions, linear equations in one, two, and three unknowns, functions and graphs, exponents and radicals, elements of quadratic equations. Prerequisite: one unit in algebra and one in geometry. Required before Mathematics 5 when necessary. 3 s.h.

MATH. 5. COLLEGE ALGEBRA.—Advanced topics in quadratic equations, systems involving quadratics, variation, binomial theorem, progressions, inequalities, theory of equations, permutations and combinations, probability, determinants, partial fractions. This course and Mathematics 6 may be taken concurrently. 3 s.h.

MATH. 6. PLANE TRIGONOMETRY.—Logarithms, right and oblique triangles, radian measure, graphs of trigonometric functions, inverse trigonometric functions, trigonometric identities and equations, complex numbers. This course and Mathematics 5 may be taken concurrently. 3 s.h.

MATH. 50. PLANE ANALYTIC GEOMETRY.—Rectangular and polar co-ordinates, loci, straight lines, conic sections. This course and Mathematics 51 may be taken concurrently. Prerequisites: Mathematics 5 and 6. 3 s.h.

MATH. 51. CALCULUS I.—Differentiation of elementary functions, curve tracing, maxima and minima, motion. Must be preceded or accompanied by Mathematics 50. 3 s.h.

MATH. 52. CALCULUS II.—Integration of elementary functions, areas, solids of revolution, length of arc, surfaces of revolution, centroids, moments of inertia, pressure, curvature, indeterminate forms. Prerequisite: Mathematics 51. 3 s.h.

MATH. 53. CALCULUS III.—Introduction to solid analytic geometry, partial differentiation, multiple integrals, series, introduction to differential equations. Prerequisite: Mathematics 52. 3 s.h.

MATH. 111. MATHEMATICAL ANALYSIS FOR ENGINEERS.—Ordinary and partial linear differential equations with constant coefficients, Fourier series and their applications, vectors. Prerequisite: Mathematics 53. 3 s.h.

MATH. 131. ELEMENTARY DIFFERENTIAL EQUATIONS.—Solution of elementary types; formation and integration of equations arising in applications. Prerequisite: Mathematics 52. 3 s.h.

MATH. 285. MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.—Vectors, line and surface integrals, tensors, complex variables, differential and integral equations. Prerequisite: Mathematics 53. 3 s.h. PROFESSOR DRESSEL

MATH. 286. MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.—Wave equation, Fourier series, heat equation, telegraphic equations. Legendre polynomials, Bessel functions, Schrodinger's equation. Prerequisite: Mathematics 53. 3 s.h. PROFESSOR DRESSEL

PHYS. 41-42. GENERAL PHYSICS.—Treats the basic principles of general physics in a more quantitative manner than Physics 1-2. Not open for credit to students who have taken Physics 1-2. Three lecture-recitations and one three-hour laboratory period each week. Concurrent: Math. 5. 8 s.h.

PHYS. 75. MODERN PHYSICS.—The elements of atomic and nuclear physics. Kinetic theory, relativity, quantum theory, spectra, x-rays, radioactivity, cosmic rays. Prerequisites: Physics 1-2 or 41-42, or equivalent. Concurrent: a course in differential calculus. 3 s.h.

PHYS. 213-214. CONTEMPORARY PHYSICS.—A course which covers the fundamental concepts and the experimental basis of modern physics. Three lectures each week. 6 s.h.

Air Science Courses

BASIC COURSES

AS 1-2. FIRST YEAR BASIC AIR SCIENCE.—This course introduces the student to the AFROTC Program and the field of aviation. The fundamentals of global geography are studied in relationship to international tensions and the resulting formation of security organizations. The course concludes with an analysis of the instruments of national military security. 4 s.h.

AS 51-52. SECOND YEAR BASIC AIR SCIENCE.—Stress is laid upon the elements and potentials of air power including targets, weapons, aircraft, air oceans, air bases, and Air Force organizations. A survey is made of the careers open to personnel in the Air Force. 4 s.h.

ADVANCED COURSES

All students selected to continue in Air Science pursue:

AS 101-102. **FIRST YEAR ADVANCED AIR SCIENCE.**—The first semester is concerned with the Air Force commander and his staff; techniques of problem solving; communications processes and Air Force correspondence; instructing in the Air Force. The second semester deals with military law, courts and boards and applied air science including problems of modern flight, navigation and weather. The functions of an Air Force Base are studied also. Prerequisite: AS 1-2 and 51-52 or equivalent. 8 s.h.

AS 201-202. **SECOND YEAR ADVANCED AIR SCIENCE.**—The first semester includes career guidance, seminar studies in the principles of leadership and management in the Air Force, and military aviation and the evolution of warfare. The second semester is concerned with the military aspects of world political geography and concludes with a briefing for commissioned service. Prerequisite: AS 1-2 and 51-52 or equivalent, and AS 101-102. 8 s.h.

Naval Science Courses

Standardized titles and designators for courses are established by the Bureau of Naval Personnel for use at the 52 NROTC Institutions. The first digit indicates the year of the course; the second digit indicates whether semester or quarter (0 for semester, 1 for quarter); the third digit indicates the semester or quarter of school year in which offered. Specialized courses for Marine Corps officer candidates are indicated by the letter "M" after the designator, and substitute for the basic course of the same number.

NS 101. **NAVAL HISTORY.**—History of navy regulations, naval customs and courtesies considered basic to further study of Naval Science; naval history, relating the rise and fall of sea power to other aspects of world history as a basis for understanding the role of navies in the world today. 3 s.h.

NS 102. **NAVAL ORIENTATION.**—Introduction to carrier, air, surface, under-sea, and amphibious warfare; basic types, characteristics, capabilities, and limitations of naval vessels; deck seamanship; naval formations and maneuvers. 3 s.h.

NS 201. **NAVAL WEAPONS.**—Evolution of naval ordnance; types and properties of explosives; principles in design and assembly of guns and ammunition; gun assembly types and operation, capabilities and limitations of past, present and future weapons systems; principles and use of radar and radar systems; elements and principles in the problem of control of naval weapons against air and surface targets. 3 s.h.

NS 202. **NAVAL WEAPONS.**—The elements of representative gunfire control systems; principles in the mechanical and electronic solution of fire-control problems; principles in the alignment and maintenance of gun batteries; organization and functions of the combat information center; naval gunfire support of amphibious operations; principles and use of anti-submarine warfare devices and systems; principles of torpedoes, mines, rockets, and guided missiles. 3 s.h.

NS 301M. **EVOLUTION OF THE ART OF WAR.**—A survey of the evolution of weapons, strategy, tactics and matériel; illustration of the classic principles of war by a study of selected battles and campaigns; a summary of the development of U. S. military and foreign policy. For Marine Corps candidates. 3 s.h.

NS 302. **NAVIGATION.**—Magnetic and gyro compasses; principles of chart construction; dead reckoning; piloting; nautical astronomy, including a study of the actual and apparent motion of the earth and studies of celestial coordinates, time systems, the astronomical triangle, and identification of stars and planets; solutions of observations for lines of position; complete day's work in practical navigation. 3 s.h.

NS 302M. MODERN BASIC STRATEGY AND TACTICS.—Modern tactical principles and techniques, especially on the small unit level, illustrated by contemporary historical examples; development of a general understanding of strategy. For Marine Corps candidates. 3 s.h.

NS 401. NAVAL OPERATIONS.—Tactics and operations including concepts of combined fleet, force, and group operations; watchstanding duties afloat; relative motion and its application to tactical maneuvering; electronic navigation; communications from ship to ship through fleet levels; Rules of the Nautical Road. 3 s.h.

NS 401M. AMPHIBIOUS WARFARE.—History and development of amphibious operations and organizations; analyses of amphibious operations of World War II and of the Korean action. For Marine Corps candidates. 3 s.h.

NS 402. NAVAL ADMINISTRATION.—Structure of the Navy; organization and administrative procedures; principles of personnel management; elements of military law; leadership and personal relations. 3 s.h.

NS 402M. AMPHIBIOUS WARFARE, PART II.—Further study of selected amphibious operations; Uniform Code of Military Justice; leadership. For Marine Corps candidates. 3 s.h.

Engineering Subjects Common to all Curricula

ENGRG. 1. ENGINEERING DRAWING.—The study of mechanical drawing with emphasis on third angle projection, pictorial drawing, dimensioning, working drawings, pencil and ink techniques. 2 s.h.

ASSISTANT PROFESSORS HAINES AND LEWIS AND STAFF

ENGRG. 2. DESCRIPTIVE GEOMETRY.—A study of drawing board geometry with emphasis on line and plane problems, developments, and intersections. Further emphasis on drawing techniques. Prerequisite: Engrg. 1. 2 s.h.

ASSISTANT PROFESSORS HAINES AND LEWIS AND STAFF

ENGRG. 57. STATICS.—A study of force systems, equilibrium by algebraic and graphic methods, friction, centroids, moments of inertia. Prerequisite: Engrg. 1; concurrent: Mathematics 52. 3 s.h.

ASSOCIATE PROFESSOR PALMER AND ASSISTANT PROFESSOR THARP

ENGRG. 58. DYNAMICS.—General principles of dynamics as applied to particles and rigid bodies. Translation, rotation, general plane motion, work and energy, impulse and momentum, gyroscopic motion. Prerequisite: Engrg. 57, Mathematics 52. 3 s.h.

ASSISTANT PROFESSOR ARGES

ENGRG. 107. STRENGTH OF MATERIALS.—Stresses and strains in elastic bodies; shear and moment diagrams; stresses in beams; beam deflections by double integration and area—moments; statically indeterminate beams, torsion, principal stresses. Prerequisite: Engrg. 57, Mathematics 52. 3 s.h.

PROFESSOR ROWE

ENGRG. 109. STRENGTH OF MATERIALS LABORATORY.—Study and use of testing machines and strain gages. Tests to determine significant physical properties of the common engineering materials. Experimental verification of the elementary theory of structural members. Must be preceded or accompanied by Engrg. 107. 1 s.h.

ASSISTANT PROFESSOR ARGES AND MR. TANER

ENGRG. 128. HYDRAULICS.—Physical properties of fluids, fluid statics, continuity and energy principles, pressure-momentum principle, elementary principles of turbines and pumps, flow of a real fluid, dimensional analysis and dynamic similarity, fluid flow in closed conduits and in open channels, fluid measurements. Prerequisite: Engrg. 58 or M.E. 52. 3 s.h. PROFESSOR WILLIAMS AND MR. HARRAWOOD

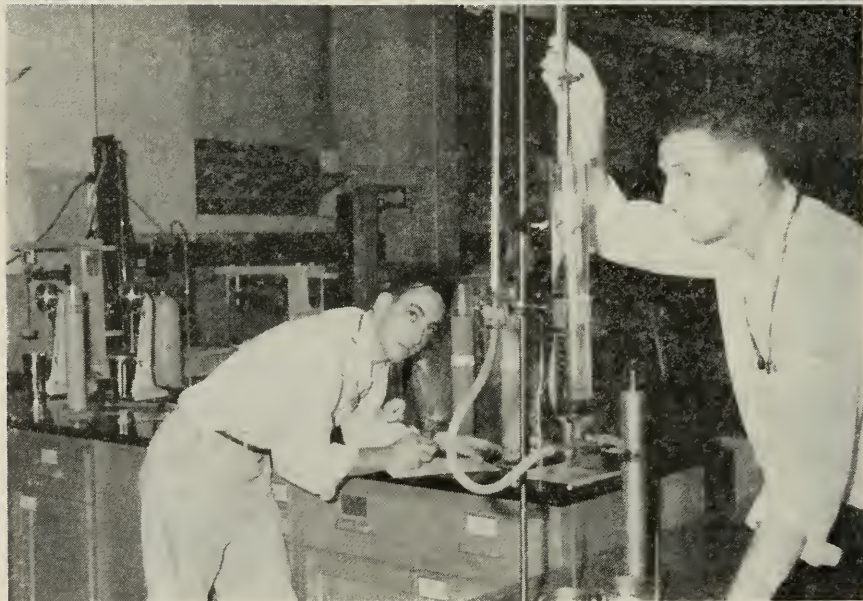
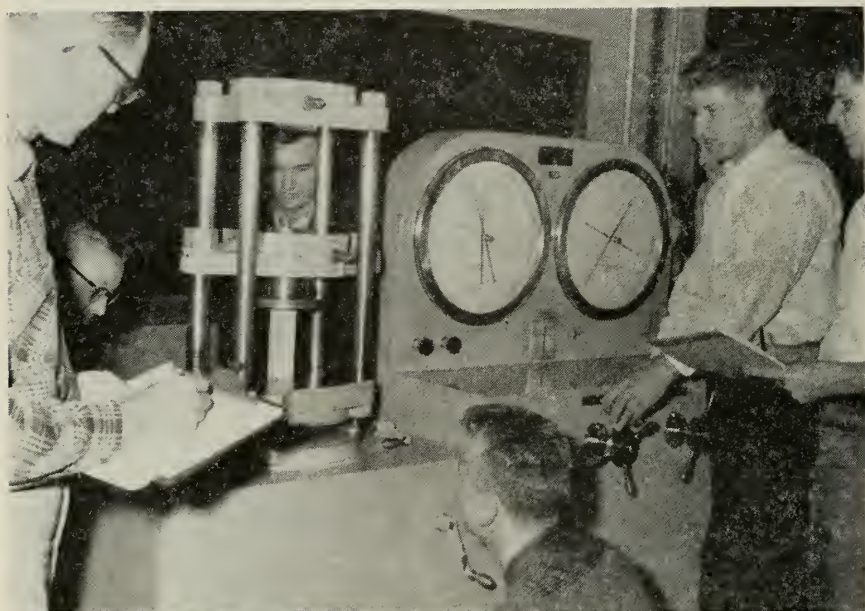
ENGRG. 151. *AIRCRAFT STRUCTURES.—Fundamental theory of stress analysis of airplane components including an introduction to design principles and methods. Space structures, inertia forces, load factors, properties of aircraft ma-

terials, buckling of thin sheets and curved panels, semimonocoque structures, plasticity, shear flow theory, semitension field beams. Seniors only. Prerequisite: Engrg. 107. 3 s.h. PROFESSOR ROWE

ENGRG. 169. *LEGAL ASPECTS OF ENGINEERING.—A course designed to introduce engineering students to those aspects of the law encountered in the practice of engineering. Subjects included are: contracts and specifications, real and personal property, torts, insurance, agency, equity, evidence, labor management, sales, expert testimony, engineering registration and ethics. Open to seniors only. 3 s.h. MR. RABIN

ENGRG. 170. *PATENT LAW FOR ENGINEERS.—A course designed to familiarize engineering students with the legal principles and procedures for protecting patentable inventions, such as drafting and analysis of specifications and claims, study of infringements, assignments, licenses, and record documentation. Open to seniors only. 3 s.h. MR. RABIN

* Offered only upon sufficient demand; enrollment limited.



Department of Civil Engineering



ROBERT SEAMAN ROWE, Chairman
Professor

JAMES WESLEY WILLIAMS
Professor

HOWARD N. HAINES
Assistant Professor

AUBREY EDWIN PALMER
Associate Professor

JAMES EMMET PETERSON
Assistant Professor

KIRO PETE ARGES
Assistant Professor

KENNETH JOHN THARP
Assistant Professor

WILLIAM HENRY GARDNER, JR.
Assistant Professor

PAUL HARRAWOOD
Instructor

MEHMET TURHAN TANER
Instructor

THE work of a civil engineer may be divided into four major fields: sanitation—public health, water supply and waste disposal; hydraulics—dealing with flood control, river improvements, irrigation, drainage, and water power; transportation—dealing with railroads, highways, airports, waterways, park systems, traffic control, and city planning; structures—dealing with bridges, buildings, foundations, dams, tunnels, tanks, bins, and various industrial structures. The concern of a civil engineer is primarily with design and construction, although often his responsibility includes maintenance. His undergraduate education comprises scientific, technical, civic, and cultural subjects. In order that he may become qualified to assume responsible charge of engineering work, he must supplement this instruction with progressive study after he graduates and while he is securing his practical experience.

The various facilities of the department are described below.

HIGHWAY MATERIALS

Complete equipment is available for the preparation and testing of aggregates, cement, bituminous materials, and concrete.

SANITARY ENGINEERING

In the sanitary laboratory there is complete equipment for performing the physical, chemical, bacteriological, and microscopic tests as outlined by the American Public Health Association. Different types of water current meters are available for work in stream gauging.

SURVEYING

The department has an unusually modern and representative collection of transits, levels, plane tables, accessory equipment, as well as precise levels and theodolites.

CIVIL ENGINEERING DRAFTING ROOM

A special drawing room has been set aside for upperclassmen in civil engineering. The room is specially illuminated with fluorescent lights and has properly conditioned two-toned walls to relieve eye strain. Filing cabinets for storing each student's equipment, eight large-sized universal drafting machines, numerous smaller-sized ones, planimeters, curves, and other accessories are readily available.

STRESS LABORATORIES

For advanced instruction in stress analysis there are various polariscopes with facilities for taking and developing pictures, large-sized Begg's deformer, loading frames, and miscellaneous tools for preparing accurate models for testing. Electric calculating machines are to be found in an adjoining room so that the students may more readily compare calculated and experimental results.

CEMENT AND CONCRETE TESTING

For the testing of cement, fine and coarse aggregates, and concrete, two rooms and an adjoining closet are provided, the closet being equipped with temperature and moisture control. In addition to the small accessories there is an automatic shot-testing briquette machine, flow table, Ro-tap shaker, steam baths, unit weight measures, capping devices, special equipment for making flexural tests, as well as a 300,000-pound hydraulic compression machine.

SOIL TESTING

For the classification of soils there is standard equipment for finding the liquid limit, plastic limit, shrinkage limit, field moisture equivalent, centrifuge moisture equivalent, specific gravity, sieve analysis using Ro-tap shaker, and hydrometer analysis using a constant temperature bath. In making foundation studies, permeability is measured by constant and variable head permeameters and by horizontal capillarity; shearing values are determined by unconfined compression tests, four modern shear machines as well as by two triaxial shear machines; bearing values are found by the Proctor and California bearing tests; consolidation and settlement forecasts are made from data secured on three consolidation machines. Laboratory tables will accommodate twenty students. Drying racks, electric ovens, and other accessories of the latest types are to be found in this laboratory.

MATERIALS LABORATORY

This laboratory is equipped to give instruction in the basic principles of stress and strain and for the testing of structural members. Its facilities are adequate for both graduate and undergraduate instruction. Included in this laboratory are three universal testing machines with capacities from 5,000 to 150,000 pounds; various hardness testers; machines for torsion, fatigue, and impact; calibration apparatus; and a variety of modern strain gauges of direct acting mechanical and electric-resistance types.

*Program of Studies for the Degree of Bachelor
of Science in Civil Engineering*

Freshman Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
Engrg	1	Engineering Drawing....	2	Engrg	2	Descriptive Geometry....	2
Engl	1	English Composition....	3	Engl	2	English Composition....	3
Hist	E1	U. S. in World Today...	3	Hist	E2	U. S. in World Today...	3
Math	5	College Algebra.....	3	†Math	50	Analytic Geometry.....	3
Math	6	Trigonometry.....	3	†Math	51	Calculus I.....	3
Phys	41	General Physics.....	4	Phys	42	General Physics.....	4
PE		Physical Education.....	1	PE		Physical Education.....	1
			19				19

Sophomore Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
Chem	1	Gen. Inorg. Chemistry...	4	Chem	2	Gen. Inorg. Chemistry...	4
CE	51	CE Fundamentals.....	1	CE	62	Surveying II.....	2
†CE	61	Surveying I.....	4	Econ	52	or Political Science.....	3
Econ	51	or Political Science.....	3	†Engrg	107	Strength of Materials...	3
Engrg	57	Statics.....	3	Engl	E93	Advanced Composition...	3
Math	52	Calculus II.....	3	Math	53	Calculus III.....	3
PE		Physical Education.....	1	PE		Physical Education.....	1
			19				19

Junior Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
CE	113	Route Surveying.....	2	CE	118	Engineering Materials....	2
†CE	131	Structural Mechanics I...	3	CE	135	Soils Mechanics.....	3
EE	123	Electric Circuits.....	4	CE	140	Structural Mechanics II..	3
Engrg	58	Dynamics.....	3	Engrg	109	Materials Laboratory...	1
*Electives.....			6	†Engrg	128	Hydraulics.....	3
			18	*Electives.....			6
							18

†Courses which must be passed before engineering academic standing can be advanced. (See page 29).

*Part of a planned program of electives with minimums of nine semester hours required in the humanities and social sciences of all students and nine semester hours required in mathematics, sciences, or technical subjects of students not taking military science.

Senior Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
CE	123	Hydraulic Engineering...	3	CE	116	Transportation Engrg...	3
CE	132	Steel and Timber.....	4	CE	124	Sanitary Engineering....	3
CE	137	Seminar.....	1	CE	133	Reinforced Concrete.....	4
ME	103	Thermodynamics.....	3	CE	146	Professional Engineering .	2
ME	115	Mech. Engrg Laboratory.	1	*Electives.....			6
*Electives.....			6				18
			18				

*Part of a planned program of electives with minimums of nine semester hours required in the humanities and social sciences of all students and nine semester hours required in mathematics, sciences, or technical subjects of students not taking military science.

COURSE SUBSTITUTIONS FOR MILITARY SCIENCE STUDENTS

Air Force and Naval ROTC students (including candidates for Marine Corps commissions) who are majoring in civil engineering substitute military science courses for certain of the courses outlined in the basic civil engineering curriculum. These substitutions are indicated by the following table.

Year	Semester	Course Replaced	ROTC SUBSTITUTE					
			Air Force		Navy		Marine	
1	1	Hist. E1 (3 s.h.)	AS	1 (2 s.h.)	NS	101 (3 s.h.)	NS	101 (3 s.h.)
	2	Hist. E2 (3 s.h.)	AS	2 (2 s.h.)	NS	102 (3 s.h.)	NS	102 (3 s.h.)
2	1	Econ. or PS (3 s.h.)	AS	51 (2 s.h.)	NS	201 (3 s.h.)	NS	201 (3 s.h.)
	2	Econ. or PS (3 s.h.)	AS	52 (2 s.h.)	NS	202 (3 s.h.)	NS	202 (3 s.h.)
3	1	Elective (3 s.h.)	AS	101 (4 s.h.)	Elective (3 s.h.)		NS	301M (3 s.h.)
	2	Technical Elective (3 s.h.)	AS	102 (4 s.h.)	NS	302 (3 s.h.)	NS	302M (3 s.h.)
4	1	Technical Elective (3 s.h.)	AS	201 (4 s.h.)	NS	401 (3 s.h.)	NS	401M (3 s.h.)
	2	Technical Elective (3 s.h.)	AS	202 (4 s.h.)	NS	402 (3 s.h.)	NS	402M (3 s.h.)

Courses of Instruction

CE 51. CIVIL ENGINEERING FUNDAMENTALS.—An introduction to engineering procedures and methods. The history and scope of civil engineering. Prerequisite: Engrg. 1. Math 5 and 6. 1 s.h. PROFESSOR ROWE

CE 61. SURVEYING I.—Use of instruments; transit, stadia and compass surveying; differential and profile leveling; setting grade stakes; calculations of bearings, latitudes, departures and areas; methods of plotting; mapping based on transit-tape and stadia surveys; determination of azimuth by solar and stellar observations; care and adjustment of instruments. Prerequisite: Engrg. 1 and Math 6. 4 s.h.

ASSISTANT PROFESSOR ARGES AND MR. HARRAWOOD

CE 62. SURVEYING II.—Topographic surveying using stadia and plane table; rural and urban land surveys; public land system; grading plans and earthwork quantities; triangulation. Introduction to photogrammetry. Prerequisite: CE 61. 2 s.h.

ASSISTANT PROFESSORS ARGES AND PETERSON

CE 108. *ADVANCED STRENGTH OF MATERIALS.—Applications of Mohr's circle, deflections, and energy of strain to advanced problems. Prerequisite: Engrg. 107. 3 s.h. ASSISTANT PROFESSOR GARDNER

S110. PLANE SURVEYING.—The equivalent of CE 61 given especially for students in forestry. See *Bulletin of Summer Session*. 4 s.h. ASSISTANT PROFESSOR ARGES

CE 113. ROUTE SURVEYING.—The calculation and laying out of simple, compound, and easement curves; widening of curves; vertical curves; setting slope stakes; ordinary earthwork computations and mass diagrams. Prerequisite: CE 61. 2 s.h. PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR THARP

CE 116. HIGHWAY ENGINEERING.—Location, design, construction and maintenance of highways and city streets; soil stabilization; traffic studies; economics of planning and design. Prerequisite: CE 113, CE 135. 3 s.h. PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR THARP

CE 118. MATERIALS OF ENGINEERING.—Study and testing of materials, commonly used in engineering. Standard tests to determine significant physical properties of cementing materials and aggregates. The design and proportioning of concrete mixtures. Prerequisite: Engrg. 107; concurrent: Engrg. 109. 2 s.h. ASSISTANT PROFESSORS ARGES AND GARDNER

CE 121. *HYDROLOGY.—Fundamentals of meteorology; precipitation; evaporation. Ground water development. Stream flow and stream gaging. Hydrograph analysis. Flood routing. Field trips to be arranged. Prerequisite: Engrg. 128. 3 s.h. PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR PETERSON

CE 123. HYDRAULIC ENGINEERING.—Pipe flow, compound pipe systems, network analysis, analysis and problems on pumps and turbines, fundamental aspects of hydrology. Open channel flow, non-uniform flow computations. Irrigation and drainage problems. Flood control and hydraulic structures. Prerequisite: Engrg. 128. 3 s.h. ASSISTANT PROFESSOR PETERSON

CE 124. SANITARY ENGINEERING.—Public Health and Engineering Aspects of Water Supply and Waste Disposal. Population estimation, storage requirements, supply and collection systems. Water and waste treatment, laboratory analyses and interpretation of results. Prerequisite: CE 123, Chemistry 2. 3 s.h. ASSISTANT PROFESSOR PETERSON

CE 131. STRUCTURAL MECHANICS I.—Stresses in trusses by algebraic and graphic methods under all conditions of loading. Structural drafting. Prerequisite: Engrg. 107. 3 s.h. ASSOCIATE PROFESSOR PALMER AND MR. TANER

CE 132. STEEL AND TIMBER.—Tension, compression, flexural members, eccentric connections, unsymmetrical bending, riveted and welded plate girders, trusses and office building frames. Timber design using ring connectors. Design and detail drawings. Prerequisite: CE 131. 4 s.h. ASSOCIATE PROFESSOR PALMER

CE 133. REINFORCED CONCRETE.—Theory and design of reinforced concrete beams, columns, and footings. Arches and bents by column analogy. Prerequisite: CE 140. 4 s.h. ASSISTANT PROFESSOR GARDNER

CE 135. SOIL MECHANICS.—Identification and classification; flow nets; frost action; stability of foundations, cuts and embankments, and retaining walls; settlement. Laboratory includes identification, permeability, shear, unconfined compression, consolidation and compaction tests. Prerequisite: Engrg. 107. 3 s.h. ASSISTANT PROFESSOR GARDNER

CE 137, 138. SEMINAR.—Students are required to make reports and to talk on current engineering literature or on such other topics as may be assigned. 1-2 s.h. STAFF

CE 140. STRUCTURAL MECHANICS II.—Application of least work, slope deflection, and moment distribution to statically indeterminate structures. Deflection of trusses. Prerequisite: CE 131. 3 s.h. PROFESSOR ROWE AND ASSOCIATE PROFESSOR PALMER

* Offered only upon sufficient demand; enrollment limited.

CE 142*. ADVANCED HYDRAULICS.—Statical and dynamical principles of fluids applied to specific engineering problems. Effects of gravity, viscosity, compressibility, and surface tension on fluid motion in closed conduits and open channels; surface and form resistance; dimensional analysis and theory of models. Non-uniform flow in open channels. Hydraulic jump, backwater curves. Prerequisite: Engrg. 128 or ME 105. 3 s.h. PROFESSOR WILLIAMS

CE 143, 144. PROJECTS IN CIVIL ENGINEERING.—This course may be assigned by the Chairman of the Department to certain seniors who have shown an aptitude for research in one distinct field of civil engineering, in which case it may be substituted for certain general civil engineering courses. 2-6 s.h. STAFF

CE 146. PROFESSIONAL ENGINEERING PROBLEMS.—Professional aspects of civil engineering practice. Selected problems in analysis and design, consideration of engineering economy, contracts, specifications, and ethics. Seniors only. 2-3 s.h. ASSOCIATE PROFESSOR PALMER

* Offered only upon sufficient demand, enrollment limited.

Department of Electrical Engineering



CHARLES ROWE VAIL, Chairman
Associate Professor

WALTER JAMES SEELEY
James B. Duke Professor

GORDON CYRIL LAHEY
Instructor

EDWARD KREADY KRAYBILL
Associate Professor

JAMES THOMAS McKEEL
Instructor

OTTO MEIER, JR.
Associate Professor

DAVID BRUCE YOUNG
Instructor

JOHN LESLIE ARTLEY
Assistant Professor

ROBERT LEON THURSTONE
Instructor, Part-time

HARRY ASHTON OWEN, JR.
Assistant Professor

ROBERT NORMAN BRIGHAM
Lecturer

PHILIP HAROLD TRICKEY
Lecturer

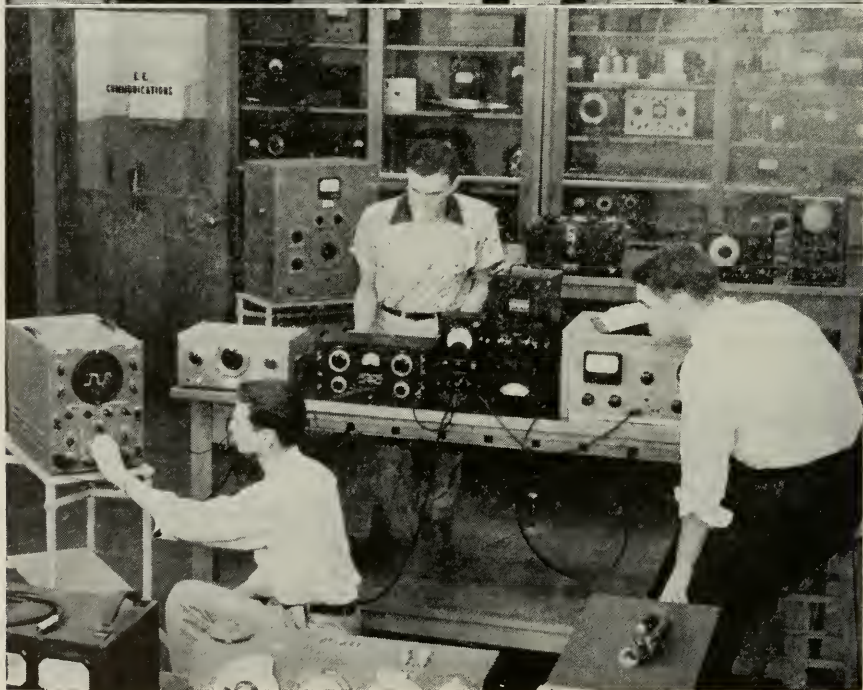
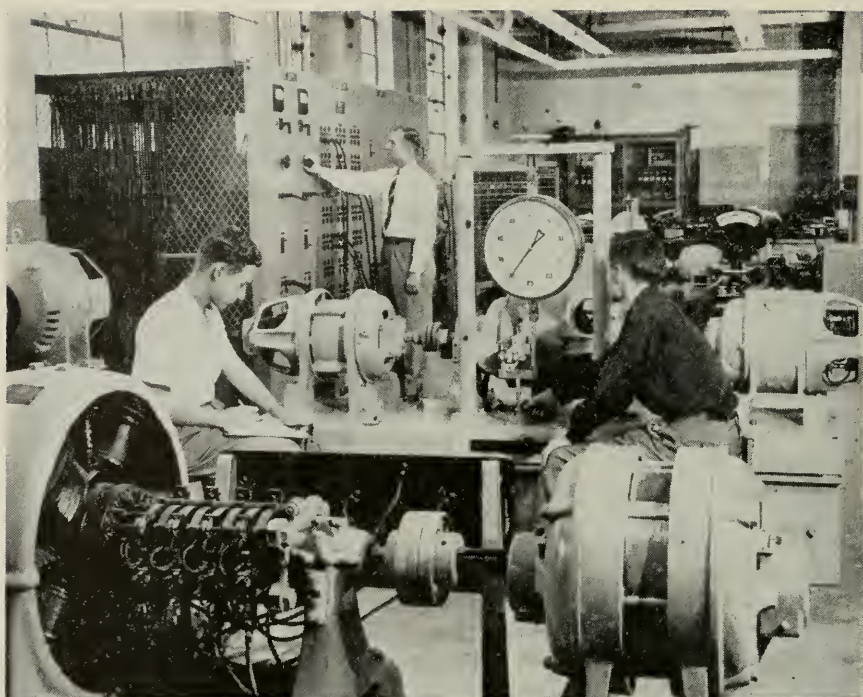
THE ELECTRICAL ENGINEERING profession functions to utilize the electrical and magnetic forces of nature and properties of matter to supply human needs. Within its province come electric power, ranging from its generation and transmission to its distribution and utilization; electrical communication, including television, radar, radio, and telephony; automation of industrial processes; nucleonics; transportation; illumination, and home appliances. It provides many of the instruments of modern scientific research and of modern medical practice.

In his practice, the electrical engineer may engage in consulting, research and development, design and manufacturing, operation and maintenance, or management and sales. His education must provide a fundamental understanding of both the science of electrical engineering, which is based on mathematics and the physical sciences, and the art of electrical engineering, which depends on human imagination and judgment. It must also provide him with an appreciation of the humanities and the social sciences.

The facilities and the program through which these needs are met are described on the following pages.

THE FIELDS AND CIRCUITS LABORATORIES

These two laboratories are equipped for the experimental study of electric and magnetic fields and circuits. Electric and fluid analog



mappers are used in studying the configurations of two-dimensional electric and magnetic fields. Nonsinusoidal waves are analyzed and synthesized and oscillographic studies are made of both steady-state and transient behavior of direct-current circuits and single-phase and polyphase alternating-current circuits.

THE INSTRUMENTATION-ELECTRONICS LABORATORY

Facilities are provided in this laboratory for studying the principles and techniques of instrumentation in all fields of engineering. Study is made of procedures for measuring such physical quantities as stress, strain, pressure, velocity, temperature, voltage, current, power and energy, making use of both electrical and mechanical devices.

This laboratory is also equipped for the study of the physical behavior of vacuum and gas-filled electron tubes and their associated circuits. Applications of electron tubes in power supplies, vacuum-tube voltmeters, oscillators, amplifiers and cathode-ray oscillographs are among the experimental studies conducted in this laboratory.

THE ADVANCED ELECTRONICS LABORATORY

This laboratory provides equipment for making measurements and performing experiments on electronic components and circuits over a wide range of frequencies. Typical experiments include: analysis of complex waves, testing of feedback amplifiers, study of transistors and associated circuits, square-wave testing of linear systems, investigation of transmission characteristics of an artificial transmission line, study of modulation and detection systems, generation and amplification of audio- and radio-frequency signals and nonsinusoidal wave form generating circuits.

THE RADIO-FREQUENCY LABORATORY

In this laboratory are located the major facilities for making measurements and studies of radio-frequency systems and their component parts in the frequency range from 50 kilocycles to 5000 megacycles. Included are signal generators, wave-meters, radio receivers, power meters, a radio-frequency bridge, and a field intensity meter. Circuit elements, coaxial and open-wire transmission lines, antennas, waveguides, resonant cavities, klystrons, magnetrons, horn radiators and parabolic reflectors are typical of the devices studied.

THE ANECHOIC LABORATORY

This laboratory is housed in a non-echoing soundproof room in which experiments can be performed on microphones, loudspeakers, and associated electro-acoustical devices. Sound level meters are used for the measurement of the reverberation characteristics of rooms and of the sound-absorbing qualities of various materials. A broadcast-type

tape recorder is used for recording and playing special testing signals as well as for more common uses.

THE ELECTRIC MACHINERY LABORATORY

The electric machinery laboratory contains a wide variety of electric power equipment which is used in standard tests of conventional machine characteristics as well as advanced studies and research into technical principles. Chief among the rotating machines especially developed for use in educational laboratories are both direct-current and alternating-current motor-generator sets with associated dynamometer equipment. Study is made of the characteristics of a wide variety of transformers as well as their use in both single-phase and polyphase systems.

THE AUTOMATIC CONTROL LABORATORY

A variety of typical servomechanisms, regulators, and electromagnetic and electronic industrial control apparatus and associated test equipment permits instruction and experimentation in the field of automatic control. An analog computer permits the study of many types of physical systems.

THE HIGH VOLTAGE LABORATORY

This laboratory is used for instruction and research with 60-cycle voltages ranging up to 100,000 volts and impulse voltages up to 500,000 volts. A high speed cathode-ray oscillograph permits the study of phenomena occurring within a tenth of a microsecond.

THE FERROMAGNETIC LABORATORY

In this laboratory are being developed facilities for gaining insights into such properties of ferromagnetic materials as magneto-thermal, magneto-optical, magneto-resistive, and magneto-strictive effects, and electromagnetic characteristics.

THE ILLUMINATION LABORATORY

This laboratory provides facilities for research in illumination and for conducting development tests of various types of light sources.

PHOTOGRAPHIC FACILITIES

For research use, the Department possesses a variety of still and motion picture cameras and maintains its own photographic dark room.

AMATEUR RADIO STATION W4AHY

This station, which is licensed to operate on the popular amateur bands using both voice and code transmission, enables interested students who hold licenses to gain practical experience in short-wave radio.

Program of Studies for the Degree of Bachelor of Science in Electrical Engineering

Freshman Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
Engrg	1	Engineering Drawing . . .	2	Engrg	2	Descriptive Geometry . . .	2
Engl	1	English Composition . . .	3	Engl	2	English Composition . . .	3
Hist	E1	U. S. in World Today . . .	3	Hist	E2	U. S. in World Today . . .	3
Math	5	College Algebra	3	†Math	50	Analytic Geometry	3
Math	6	Trigonometry	3	†Math	51	Calculus I	3
Phys	41	General Physics	4	Phys	42	General Physics	4
PE		Physical Education	1	PE		Physical Education	1
			19				19

Sophomore Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
Chem	1	Gen. Inorg. Chemistry . . .	4	Chem	2	Gen. Inorg. Chemistry . . .	4
EE	51	E. E. Orientation	1	†EE	52	E. E. Principles I	4
EE	71	Instrumentation	1	Engl	E93	Advanced Composition . . .	3
Engrg	57	Statics	3	Math	53	Calculus III	3
Engl	151	Public Speaking	3	ME	52	Kinetics-Mechanism	4
Math	52	Calculus II	3	PE		Physical Education	1
Phys	75	Modern Physics	3				
PE		Physical Education	1				
			19				19

Junior Year

FIRST SEMESTER				SECOND SEMESTER			
		S.H.				S.H.	
Econ	51	Prin. of Economics	3	Econ	52	Prin. of Economics	3
EE	101	E. E. Principles II	3	†EE	102	E. E. Principles III	3
EE	107	E. E. Prin. Laboratory . . .	1	EE	108	E. E. Prin. Laboratory . . .	1
Engrg	107	Strength of Materials . . .	3	EE	106	Intro. to Electronics . . .	3
Engrg	109	Materials Laboratory . . .	1	EE	114	Electronics Laboratory . .	1
Math	111	Math. Analysis for Engrs. .	3	ME	104	Applied Thermodynamics .	3
ME	103	Applied Thermodynamics .	3	ME	105	Fluid Mechanics	3
ME	115	M. E. Laboratory	1	ME	116	M. E. Laboratory	1
			18				18

†Courses which must be passed before engineering academic standing can be advanced. (See page 29).

Senior Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
EE	163	Elec. Mach. Laboratory..	1	EE	164	Elec. Mach. Laboratory..	1
EE	165	E. E. Seminar.....	1	EE	166	E. E. Seminar.....	1
EE	167	Adv. Electron. Lab.....	1	EE	168	Adv. Electron. Lab.....	1
EE	257	Electric Machinery I.....	3	EE	258	Electric Machinery II....	3
EE	261	Adv. Electron.		EE	262	Adv. Electron.	
		Networks I.....	3			Networks II.....	3
EE		Approved EE Elective... 3	3	EE		Approved EE Elective... 3	3
		*Approved Elective..... 6	6			*Approved Elective..... 6	6
			18				18

*It is recommended that at least 6 semester hours of the approved electives of the senior year be taken in liberal arts. Each student must carry a carefully planned approved *program* of electives, designed to meet a particular objective.

COURSE SUBSTITUTIONS FOR MILITARY SCIENCE STUDENTS

Air Force and Naval ROTC students (including candidates for Marine Corps commissions) who are majoring in electrical engineering substitute military science courses for certain of the courses outlined in the basic electrical engineering curriculum. These substitutions are indicated by the following table.

Year	Semester	Course Replaced		ROTC SUBSTITUTE					
				Air Force		Navy		Marine	
1	1	Hist	E1 (3 s.h.)	AS	1 (2 s.h.)	NS	101 (3 s.h.)	NS	101 (3 s.h.)
	2	Hist	E2 (3 s.h.)	AS	2 (2 s.h.)	NS	102 (3 s.h.)	NS	102 (3 s.h.)
2	1	Engl	E93 (3 s.h.)	AS	51 (2 s.h.)	NS	201 (3 s.h.)	NS	201 (3 s.h.)
	2	Engl	151 (3 s.h.)	AS	52 (2 s.h.)	NS	202 (3 s.h.)	NS	202 (3 s.h.)
3	1	Econ	51 (3 s.h.)	AS	101 (4 s.h.)	Econ	51 (3 s.h.)	NS	301M (3 s.h.)
	2	Econ	52 (3 s.h.)	AS	102 (4 s.h.)	NS	302 (3 s.h.)	NS	302M (3 s.h.)
4	1	Approved Electives (6 s.h.)		{AS 201 (4 s.h.) Engl E93 (3 s.h.)		{NS 401 (3 s.h.) Engl E93 (3 s.h.)		{NS 401M (3 s.h.) Engl E93 (3 s.h.)	
	2	Approved Electives (6 s.h.)		{AS 202 (4 s.h.) Econ 51 (3 s.h.)		{NS 402 (3 s.h.) Approved Elective (3 s.h.)		{NS 402M (3 s.h.) Econ 51 (3 s.h.)	

*Program of Studies in Electrical Engineering for
the Degree of Master of Science*

Through the Graduate School of Arts and Sciences, the Department of Electrical Engineering offers work leading to the degree of Master of Science. As a prerequisite to graduate study the student normally must have been awarded a Bachelor's degree in an accredited engineering curriculum. Minimum prerequisites to the graduate courses in electrical engineering are a knowledge of differential equations, electric and magnetic field theory, and the theory of networks.

The minimum requirement for the M.S. degree is satisfactory com-

pletion of 30 semester hours of graduate work, as follows: 12 semester hours in engineering, 12 semester hours of minor work outside the College of Engineering (normally in mathematics and physics), and 6 semester hours of credit for a research-based thesis. There is no foreign language requirement.

Courses of Instruction

EE 51. ELECTRICAL ENGINEERING ORIENTATION.—The basic philosophy of engineering education; introduction to the staff, the curriculum, and the facilities of the Department of Electrical Engineering; techniques for use of the library; instruction in use of the sliderule and in methods of study; information concerning the role of engineering and of the professional engineering societies in our national life; introduction to the principles of engineering economy. One two-hour session. 1 s.h.

ASSOCIATE PROFESSOR KRAYBILL AND

ASSISTANT PROFESSOR ARTLEY

EE 52. ELECTRICAL ENGINEERING PRINCIPLES I: ELECTROMAGNETICS.—The first of a three-course sequence that develops the fundamental principles common to all electrical engineering. The mathematical and physical analysis of energy relations in electric and magnetic fields; the interrelationships between field and circuit concepts as a transition to the study of electric and magnetic circuits; vector notation; potential; gradient; Faraday's and Coulomb's laws; Ampere's law; dielectric and magnetic materials; resistance, capacitance and inductance of systems of conductors; systems of electric and magnetic units; simple circuits. Four recitations. Prerequisite: Mathematics 52; Physics 42. 4 s.h.

ASSISTANT PROFESSOR ARTLEY

EE 71. INSTRUMENTATION.—Basic principles of instrumentation systems; characteristics and construction of devices for measuring physical quantities encountered in all branches of engineering. One three-hour session. Prerequisite: Mathematics 51; Physics 42. 1 s.h.

ASSISTANT PROFESSOR ARTLEY AND MR. LAHEY

EE 101. ELECTRICAL ENGINEERING PRINCIPLES II: CIRCUITS.—The principles of alternating- and direct-current electric circuits; instantaneous and effective values; the algebra of phasors and complex quantities; impedances in combination; Kirchhoff's laws; coupling; nonsinusoidal waves; Laplace transform; transients. Prerequisite: EE 52. Concurrent: Mathematics 111. 3 s.h.

ASSOCIATE PROFESSOR VAIL

EE 102. ELECTRICAL ENGINEERING PRINCIPLES III: NETWORKS.—The principles of electric network analysis employing more sophisticated techniques than were encountered in the preceding course. Matrix notation; the generalized concept of impedance; the use of electric network analogue techniques in solving non-electrical problems; mesh and nodal analysis; wye-delta transformations; reciprocity theorem; Thevenin's and Norton's theorems; polyphase circuits. Prerequisite: EE 101; Mathematics 111. 3 s.h.

ASSOCIATE PROFESSOR VAIL

EE 106. INTRODUCTORY ELECTRONICS.—Topics that are basic to engineering applications of electronics; particle ballistics; emission; conduction of vacuums, gases, liquids and solids; static and dynamic characteristics of vacuum and solid state devices; basic amplifier circuits. Three recitations. Prerequisite: EE 101. Concurrent EE 114. 3 s.h.

ASSISTANT PROFESSOR ARTLEY AND MR. LAHEY

EE 107-108. ELECTRICAL ENGINEERING PRINCIPLES LABORATORY.—Instruction in electrical laboratory techniques and in the preparation of engineering reports; experimental verification and amplification of the theory in the sequence of courses EE 52, EE 101 and EE 102. One three-hour laboratory. 2 s.h.

MESSRS. THURSTONE AND YOUNG

EE 114. **INTRODUCTORY ELECTRONICS LABORATORY.**—A course designed to acquaint the student with electronic equipment and laboratory techniques, as well as to complement and supplement the principles of the classroom course with which it should be taken concurrently. 1 s.h. STAFF

EE 123. **PRINCIPLES OF ELECTRIC CIRCUITS.**—A course designed especially for students in other branches of engineering, covering the fundamental electrical units and both alternating- and direct-current circuits. Three class sessions and one three-hour laboratory. Prerequisite: Mathematics 52 and Physics 42. 4 s.h.

ASSOCIATE PROFESSOR KRAYBILL AND MESSRS.
BRIGHAM, LAHEY, McKEEL AND YOUNG

EE 124. **PRINCIPLES OF ELECTRIC MACHINERY.**—A course designed especially for students in other branches of engineering, covering the application of the principles of course EE 123 to alternating- and direct-current machinery and associated apparatus. Three class sessions and one three-hour laboratory. Prerequisite: EE 123. 4 s.h.

ASSOCIATE PROFESSOR KRAYBILL AND MESSRS.
BRIGHAM, LAHEY, McKEEL AND YOUNG

EE 159. ***TRANSMISSION.**—A development of the theory underlying the transmission of electric energy over conductors at both power and communication frequencies. Two class sessions and one two-hour computation. Prerequisite: EE 102, EE 106, Mathematics 111. Elective for electrical majors. 3 s.h. PROFESSOR SEELEY

EE 161. ***HIGH-VOLTAGE PHENOMENA.**—An introductory study of high voltage phenomena and their engineering application; behavior of gaps and insulators upon application of power-frequency and impulse voltages; corona; properties of insulating materials; high-voltage measurements; elements of high-voltage design. Two class sessions and one three-hour laboratory. Prerequisite: EE 101-102, EE 105-106, and permission of instructor. Elective for electrical majors. 3 s.h.

ASSOCIATE PROFESSOR VAIL

EE 163-164. **ELECTRIC MACHINERY LABORATORY.**—A two-semester course paralleling and integrated with the classroom course EE 257-258, with which it should be taken concurrently. 2 s.h. ASSOCIATE PROFESSOR MEIER; MR. McKEEL

EE 165-166. **ELECTRICAL ENGINEERING SEMINAR.**—A course in which seniors are required to present oral reports and dissertations on material appearing in current engineering literature. Juniors may participate, but without credit. 2 s.h. STAFF

EE 167-168. **ADVANCED ELECTRONICS LABORATORY.**—A two-semester laboratory course paralleling and integrated with the classroom course in Advanced Electronic Networks, with which this course should be taken concurrently. 2 s.h. ASSISTANT PROFESSOR OWEN

EE 171. ***FUNDAMENTALS OF ILLUMINATION.**—Factors that influence seeing; lighting language, sources, and measuring techniques; basic factors involved in recommended lighting practice. Two class sessions and one two-hour computation. Prerequisite: EE 101-102 or EE 123, and permission of instructor. Elective. 3 s.h. ASSOCIATE PROFESSOR KRAYBILL

EE 173-174. ***PROJECTS IN ELECTRICAL ENGINEERING.**—A course which may be undertaken only by seniors who show special aptitude, or who may have had previous experience directly related to the proposed project. The consent of the Chairman of the Department must be obtained before registering. Elective for electrical majors. 3-6 s.h. STAFF

EE 175. ***NETWORK ANALYSIS.**—An advanced study of electric network theory and its application to certain problems in engineering practice; complex frequency; pole and zero network analysis; analogue solutions; filters and transmission lines. Prerequisite: EE 102; permission of instructor. 3 s.h.

ASSISTANT PROFESSOR OWEN

* Offered only upon sufficient demand; enrollment limited.

EE 177. *ELECTROMAGNETIC THEORY.—Vector analysis; Maxwell's equations; radiation; propagation; antennas. Prerequisite: EE 102; permission of instructor. 3 s.h. ASSISTANT PROFESSOR OWEN

EE 179. *ADVANCED ELECTRICAL MEASUREMENTS.—The theory and practice of measurements of electrical quantities at extremes of voltage, current, power, and frequency. Two class sessions and one three-hour laboratory. Prerequisite: EE 71, EE 102, EE 106, and permission of instructor. 3 s.h. ASSISTANT PROFESSOR ARTLEY

EE 189. *ELECTROMAGNETIC DEVICES.—General concepts and techniques useful in solving problems arising in the design of electromagnetic devices, particularly those employing ferromagnetic materials; relays; saturable reactors; rotating amplifiers; motors and generators. Prerequisite: permission of instructor. 3 s.h. ASSISTANT PROFESSOR ARTLEY

EE 197. *INDUSTRIAL APPLICATION OF ELECTRICAL EQUIPMENT.—Lectures, demonstrations, and recitations designed especially for students in other branches of engineering, dealing with the basic principles of utilization of a wide variety of electrical equipment in industrial practice. Emphasis on industrial control, motor and generator application, and electronic devices and applications. Prerequisite: EE 124 and permission of instructor. Elective for nonelectricals. 3 s.h. ASSOCIATE PROFESSOR MEIER

EE 199. *FEEDBACK CONTROL SYSTEMS.—The theory, analysis, design and operation of servomechanisms, regulators, program controllers, and other feedback controls; electrical, mechanical, hydraulic, aerodynamic, pneumatic, and thermal systems; steady-state and transient solutions; stability criteria and diagrams; linear and nonlinear systems. Two class sessions and one three-hour laboratory. Prerequisite: EE 102, EE 106, and permission of instructor. Concurrent: EE 163 and EE 257. Elective for electrical majors. 3 s.h. ASSISTANT PROFESSOR ARTLEY

EE 201. *ENERGY SYSTEMS.—Consideration of general concepts of energy storage, transfer, transformation, and control that are applicable to a wide variety of technical systems, with emphasis on their common mathematical structure. Included are electrical, magnetic, mechanical, hydraulic, aerodynamic, and thermal systems. Applications to specific engineering devices and machines. Prerequisite: permission of instructor. 3 s.h. ASSISTANT PROFESSOR ARTLEY

EE 202. *INFORMATION SYSTEMS.—Consideration of general concepts of information storage, transfer, and processing. Optimum total response of information handling systems, including considerations of stability and dynamic response in the time and frequency domains. Applications to communications networks and devices, including an introduction to computers. Prerequisite: permission of instructor. 3 s.h. ASSISTANT PROFESSOR OWEN

EE 211. *SOLID STATE ENGINEERING.—An introduction to concepts and engineering applications of solid state physics: crystalline structure and thermal properties of solids; insulators, semiconductors, and conductors; magnetic materials. Prerequisite: permission of instructor. 3 s.h. ASSOCIATE PROFESSOR VAIL

EE 231. *NUCLEAR ENGINEERING.—Review of nuclear physics; fission and the chain reaction; nuclear reactor principles; materials, instrumentation, and control of nuclear reactors; selected applications and techniques of nuclear engineering. Prerequisite: permission of instructor. 3 s.h. ASSOCIATE PROFESSOR MEIER

EE 257-258. ELECTRIC MACHINERY I-II.—Application of circuit and field principles to the underlying theory of design and operation of both static and rotating electric machinery; transformers; rotating machine components; energy flow in generators and motors; induction and synchronous generators and motors; commutation; d-c generators and motors; series and parallel operation of electric machines. Prerequisite: EE 102. Concurrent: EE 163-164. 6 s.h. ASSOCIATE PROFESSOR MEIER AND MR. TRICKEY

* Offered only upon sufficient demand; enrollment limited.

EE 259. *ADVANCED ELECTRICAL ENERGY CONVERSION.—Advanced theory of rotating electric machines; direct and quadrature axis components; equivalent circuits; symmetrical components; transients in machine systems. Prerequisite: An advanced course in electric machinery and permission of instructor. 3 s.h.

ASSOCIATE PROFESSOR MEIER

EE 261-262. ADVANCED ELECTRONIC NETWORKS I-II.—Advanced topics in engineering electronics; electronic circuit analysis; narrow- and wide-band amplifiers; feedback amplifiers; oscillators; modulation and demodulation; nonsinusoidal waves in linear and non-linear circuits; microwave devices; communication systems. Prerequisite: EE 102; EE 106. Concurrent: EE 167-168. 6 s.h.

ASSISTANT PROFESSOR OWEN

EE 263-264. *OPERATIONAL CIRCUIT ANALYSIS.—The mathematical analysis of certain circuits used in electrical engineering, with an introduction to the application of operational calculus to circuit analysis. Prerequisite: EE 101-102, Mathematics 111, and permission of instructor. Elective for electrical majors. 6 s.h.

PROFESSOR SEELEY

EE 265. *ADVANCED TOPICS IN COMMUNICATIONS.—Special problems dealing in the design and application of devices and systems in communications engineering. Prerequisite: An advanced course in electronic networks. 3 s.h.

ASSISTANT PROFESSOR OWEN

EE 297-298. THESIS RESEARCH.—A student with the proper background may carry on research under direction of a member of the staff in one of the following fields. Thesis credit only. 6 s.h.

(a) DIELECTRIC AND MAGNETIC MATERIALS.

ASSOCIATE PROFESSOR VAIL AND
ASSISTANT PROFESSOR ARLEY

(b) INSTRUMENTATION.

ASSISTANT PROFESSOR OWEN

(c) ENERGY CONVERSION.

ASSOCIATE PROFESSOR MEIER

* Offered only upon sufficient demand; enrollment limited.

Department of Mechanical Engineering



JOHN NELSON MACDUFF, Chairman
Professor

FREDERICK JEROME REED
Professor

VAN LESLIE KENYON, JR.
Professor

ERNEST ELSEVIER
Assistant Professor

CHARLES DARBY FULTON, JR.
Assistant Professor

WILLIAM ROWLEY SHAWNER
Instructor, Part time

RALPH ELTON LEWIS
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LESLIE CLIFFORD WILBUR
Assistant Professor

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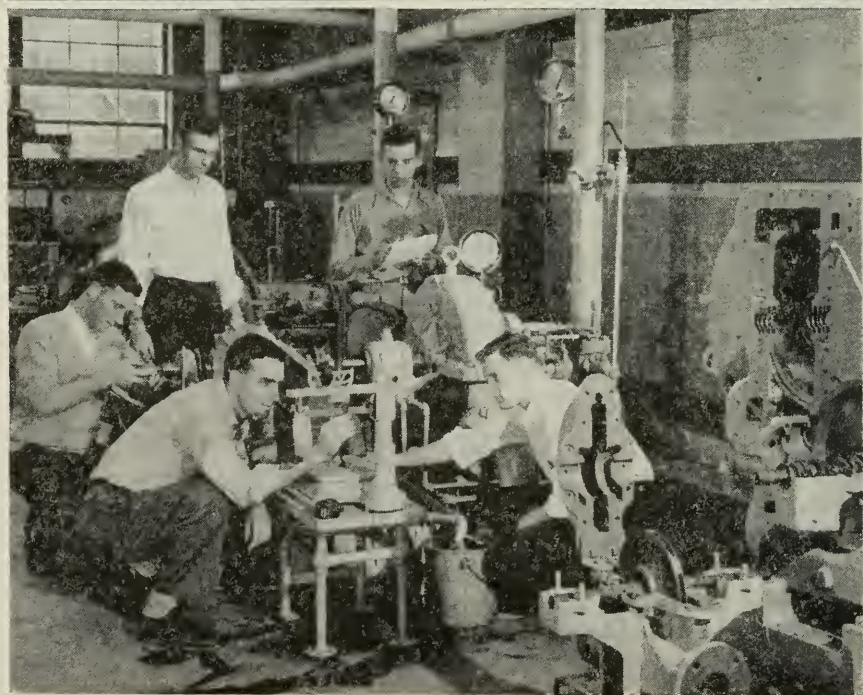
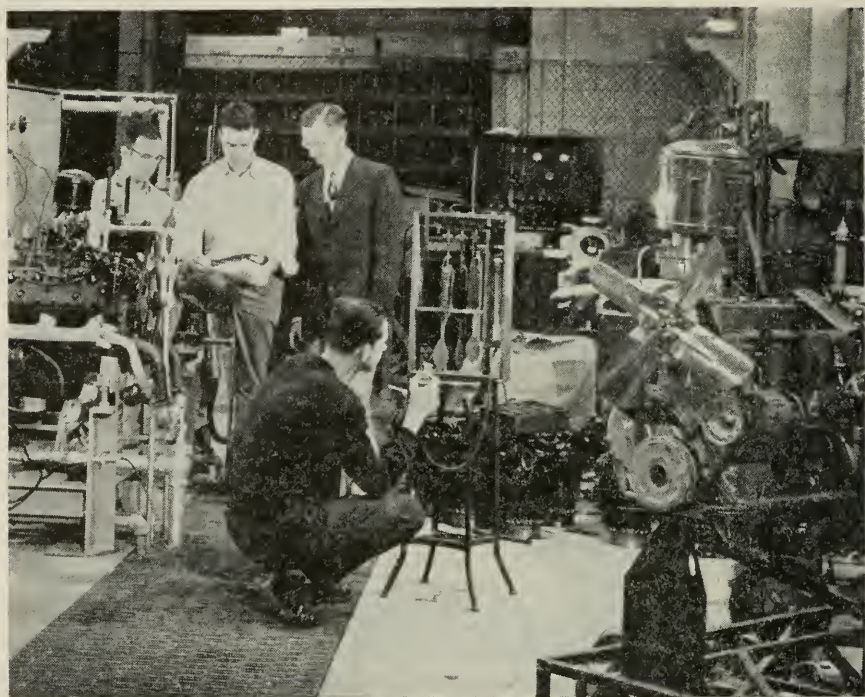
ROBERT WORTH TAYLOR
Instructor, Part Time

THE MECHANICAL ENGINEERING profession has the satisfying function of translating the ever-growing fund of scientific knowledge into power, machines and countless devices for the benefit and comfort of mankind. To do this, it utilizes the available resources of fuels, nuclear energy and raw materials. Its members pursue careers in three general categories: (1) research, development and design; (2) production, testing, application, maintenance and operation; and (3) management.

The mechanical engineering curriculum at Duke University has been carefully designed to provide the optimum balance between basic sciences, mathematics, engineering sciences, social sciences, humanities and professional engineering courses. Flexibility is provided in the form of electives by which the student may emphasize particular goals of his own choosing. The curricular and extra-curricular activities provide a maximum opportunity to develop scientific knowledge, mental discipline, judgment and ingenuity, social balance, leadership, and ethical responsibility.

POWER PLANT LABORATORY

This laboratory occupies a two-story wing off the main mechanical engineering laboratory. An automatic oil-fired boiler, designed specifically for the needs of this laboratory, produces 3200 pounds of steam per hour at a pressure of 250 pounds and a temperature of 556°F. This steam is utilized to operate a complete experimental power plant consisting of two 25-kw turbogenerator units, a condenser with air



ejector and after-condenser, a feedwater heater, pumps and accessories, and a control and instrument panel. The electric energy is absorbed by resistors or by a synchronous motor coupled to a water brake. Interconnection of piping and controls, together with complete instrumentation, enable the simulation and study of many types of power plants.

MECHANICAL LABORATORY

STEAM EQUIPMENT: Adjacent to the boiler room are a horizontal 25-hp steam engine with shaft cut-off governor, a vertical 10-hp steam engine with throttle governor, a 25-hp steam turbine, and a condenser with air ejector, aftercondenser, and accessories. Additional steam equipment includes calorimeters, an orifice apparatus, and an injector.

INTERNAL COMBUSTION ENGINES: A section of the west side of the laboratory contains two automobile engines and a 10-hp Diesel engine with generator, all instrumented for determination of their characteristics and performance. Indicator diagrams are obtained with a mechanical indicator or with a strain-gauge pickup, amplifier, volume signal generator, and oscilloscope. The laboratory also contains 7.5-hp Diesel and gasoline engines with a cradle dynamometer and cutaway automobile and aircraft engines.

AIR COMPRESSORS: A thorough study of air compression is afforded by the use of an 8 by 9-inch water-cooled single-stage compressor driven by a 25-hp a-c motor and a 2-stage V-type air-cooled compressor driven by a 25-hp d-c motor.

FLUID APPARATUS: A section of the east side of the laboratory contains a centrifugal pump driven by a variable-speed motor, together with a series of weirs and orifices. Another centrifugal pump delivers water to a turbine having a transparent casing, while nearby is an apparatus for the measurement of water friction in pipes and fittings. On the upper level are a centrifugal fan fitted with orifices and a pitot-static tube, and a second fan discharging through pipes and fittings for the measurement of duct friction. A small 45-mph wind tunnel is used for the measurement of lift, drag, and pressure distribution on models.

LUBRICANT, FUEL, AND FEEDWATER TESTING: In the south end of the main laboratory are two rooms completely equipped for measurement of the properties of solid, liquid, and gaseous fuels and of lubricating oils.

HEATING, AIR CONDITIONING, AND REFRIGERATION: Two domestic heating boilers are fitted with heat exchangers, circulating pumps, controls and other accessories for testing and perform-

ance analysis. One is a steam boiler arranged for hand firing with coal while the other is a hot-water boiler arranged with both oil and gas burners. Another section of the laboratory contains a calorimeter room, a low temperature room, a panel mounted refrigeration system with transparent piping, and a complete 5-hp compression refrigeration system. These provide complete facilities for testing air conditioning units, radiators, convectors and cold storage units; for detailed study of a refrigeration system; for measurement of heat transfer through walls and glass and in various types of heat exchangers; and for carrying out special projects in this field. Three recently acquired air conditioning units will increase the scope of work that can be carried on in this section.

INSTRUMENT ROOM: This room provides a full supply of instruments including indicators, tachometers, planimeters, stop-watches, velometers, thermometers, thermocouples, potentiometers, pressure gages, deadweight testers, scales, Orsat gas analyzers, and other devices.

METALLOGRAPHY AND STRESS ANALYSIS LABORATORY

This laboratory contains a 1000-diameter metallurgical microscope with photographic equipment, a darkroom, polishing equipment, a specimen mounting press, and a small automatically controlled furnace permitting a study of the grain and crystal structure of metals and of the effects of heat treatments.

A large polariscope affords measurement and visual observation of stresses in plastic models. Electronic equipment comprising wire strain gages, an amplifier, and an oscilloscope permit the direct measurement of strains as small as one microinch.

SHOPS

While the Department does not provide shop instruction as a part of the regular curriculum, adequate facilities are provided for the maintenance of the laboratories, for student and faculty projects, and for special instruction.

METAL SHOP: This shop, located on the upper level of the main laboratory, contains three lathes with accessories, a drill press, an arbor press, a precision grinder, a tool grinder, a milling machine, a shaper, a variety of small tools and accessories, and adequate stocks of materials.

WOOD SHOP: This shop, located on the top floor of the building, contains a lathe, a drill press, a planer, a band saw, a jig saw, two circular saws, a shaper, and a variety of accessories and small tools.

WELDING AND BRAZING EQUIPMENT: A 200-ampere arc welding machine and complete oxy-acetylene welding and cutting equipment are provided, together with materials and accessories.

Program of Studies for the Degree of Bachelor of Science in Mechanical Engineering

Freshman Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
Engrg 1	Engineering Drawing....	2	Engrg 2	Descriptive Geometry....	2
Engl 1	English Composition....	3	Engl 2	English Composition....	3
Hist E1	U. S. in World Today....	3	Hist E2	U. S. in World Today....	3
Math 5	College Algebra.....	3	†Math 50	Analytic Geometry.....	3
Math 6	Trigonometry.....	3	†Math 51	Calculus I.....	3
Phys 41	General Physics.....	4	Phys 42	General Physics.....	4
PE	Physical Education.....	1	PE	Physical Education.....	1
		19			19

Sophomore Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
Chem 1	Gen. Inorg. Chemistry....	4	Chem 2	Gen. Inorg. Chemistry....	4
Econ 51	Prin. of Economics.....	3	Econ 52	Prin. of Economics.....	3
Engrg 57	Statics.....	3	Engrg 107	Strength of Materials....	3
Math 52	Calculus II.....	3	Engrg 109	Materials Laboratory....	1
Engl E93	Advanced Composition....	3	†ME 52	Kinematics, Kinetics....	4
PE	Physical Education.....	1	Math 53	Calculus III.....	3
		17	PE	Physical Education.....	1
					19

Junior Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
EE 123	Electric Circuits.....	4	EE 124	Electric Machinery.....	4
ME 101	Thermodynamics.....	3	†ME 102	Thermodynamics.....	3
ME 105	Fluid Mechanics.....	3	†ME 106	Heat Transfer.....	3
ME 107	Materials and Processes..	3	ME 114	Mech. Eng. Laboratory..	1
ME 113	Mech. Eng. Laboratory..	1	†ME 151	Machine Design.....	5
ME 150	Machine Design.....	2		Elective.....	3
	Elective.....	3			19
		19			

Senior Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
Math 111	Math Analysis for Engrs..	3	ME 154	Refrigeration.....	3½
ME 153	Heating, Air Conditioning	3½	ME 158	Industrial Engineering..	3
ME 155	Int. Combustion Engines.	3	ME 160	Mech. Eng. Laboratory..	1
ME 159	Mech. Eng. Laboratory..	2	ME 162	Power Plants.....	3
ME 171	Instrumentation.....	2	ME 163	Advanced Mechanics....	3
ME 173	Seminar.....	2	ME 174	Seminar.....	1
	Elective.....	3		Elective.....	3
		18½			17½

†Courses which must be passed before engineering academic standing can be advanced. (See page 29).

COURSE SUBSTITUTIONS FOR MILITARY SCIENCE STUDENTS

Air Force and Naval ROTC students (including candidates for Marine Corps commissions) who are majoring in mechanical engineering substitute military science courses for certain of the courses outlined in the basic mechanical engineering curriculum. These substitutions are indicated by the following table.

Year	Semester	Course Replaced	ROTC SUBSTITUTE					
			Air Force		Navy		Marine	
1	1	Hist. E1 (3 s.h.)	AS	1 (2 s.h.)	NS	101 (3 s.h.)	NS	101 (3 s.h.)
	2	Hist. E2 (3 s.h.)	AS	2 (2 s.h.)	NS	102 (3 s.h.)	NS	102 (3 s.h.)
2	1	Econ. 51 (3 s.h.)	AS	51 (2 s.h.)	NS	201 (3 s.h.)	NS	201 (3 s.h.)
	2	Econ. 52 (3 s.h.)	AS	52 (2 s.h.)	NS	202 (3 s.h.)	NS	202 (3 s.h.)
3	1	Elective (3 s.h.)	AS	101 (4 s.h.)	Elective (3 s.h.)		NS	301M (3 s.h.)
	2	Elective (3 s.h.)	AS	102 (4 s.h.)	NS	302 (3 s.h.)	NS	302M (3 s.h.)
4	1	Elective (3 s.h.)	AS	201 (4 s.h.)	NS	401 (3 s.h.)	NS	401M (3 s.h.)
	2	Elective (3 s.h.)	AS	202 (4 s.h.)	NS	402 (3 s.h.)	NS	402M (3 s.h.)

Courses of Instruction

ME 52. KINEMATICS, KINETICS.—Mathematical and graphical studies of displacement, velocity and acceleration in mechanical elements and systems. Synthesis and analysis of mechanisms for automatic machines; work, energy, impulse and momentum applied to the plane motion of rigid bodies. Prerequisite: Mathematics 52, Engineering 57. 4 s.h.
 PROFESSOR MACDUFF, MR. RABIN

ME 101-102. ENGINEERING THERMODYNAMICS.—A basic study of the laws of thermodynamics, their corollaries, and their use in engineering analysis and design. Properties and processes of gases, vapors, vapor-liquid systems, and mixtures. Cycles. Combustion. Prerequisite: Chemistry 2, Physics 42, Mathematics 52. 6 s.h.
 ASSISTANT PROFESSOR WILBUR

ME 103-104. APPLIED THERMODYNAMICS.—A terminal course in thermodynamics and its engineering applications, for civil and electrical engineering students. First semester: first and second laws, gases, vapors, processes, cycles. Second semester: Combustion analysis, applications of the first and second laws of thermodynamics, heat transfer, psychrometry and refrigeration. Prerequisite: Chemistry 2, Physics 42, Mathematics 52. 6 s.h. PROFESSORS KENYON AND REED, MR. RABIN

ME 105. FLUID MECHANICS.—An introduction to fluid statics and dynamics. Basic laws, internal and external flow phenomena, dimensional analysis, dynamic similarity, viscosity, compressibility, propulsion and fluid power. Prerequisite: Physics 42, Mathematics 52. 3 s.h.
 PROFESSOR KENYON

ME 106. HEAT TRANSFER.—A basic course covering conduction, radiation and convection; heat transfer to boiling liquids and condensing vapors; overall transfer of heat; steady state and variable flow; graphical and analytical solutions. Prerequisite: Mathematics 52, Physics 42. Concurrent: ME 102 or ME 103, ME 105 or Engineering 128. May be elected by a limited number of CE and EE students. 3 s.h.
 PROFESSORS REED AND KENYON

ME 107. MATERIALS AND PROCESSES.—Lectures and recitations covering elementary metallurgy, selection and mechanical properties of engineering materials, and effect of fabrication methods upon properties; casting, forging, welding, rolling, machining, grinding, other common processes and interchangeable manufacture as

applied to present-day industry. Supplemented with films and demonstrations. Prerequisite: Chemistry 2, Engineering 107, Engineering 109. 3 s.h.

PROFESSOR MACDUFF, MESSRS. CALLISON AND RABIN

ME 108. *AERONAUTICS.—A general course applying the principles of fluid mechanics to airfoils, propellers and the complete airplane. Prerequisite: ME 105. 3 s.h.

ASSISTANT PROFESSOR ELSEVIER

ME 113-114. JUNIOR MECHANICAL ENGINEERING LABORATORY.—Open only to mechanical engineering students. First semester: experiments and reports on instruments, dynamometers, hydraulics, analysis of exhaust gas, and properties of fuels and oils. Second semester: Experimental fuel analysis, colorimetry, flow phenomena and instrument calibration. Concurrent: ME 101-102. 2 s.h. STAFF

ME 115-116. MECHANICAL ENGINEERING LABORATORY.—Open only to electrical and civil engineering students. Experiments and reports on instruments, hydraulics, brakes and dynamometers, analysis of exhaust gas, heating value of fuels, internal combustion engines, air compressor, steam engine, steam turbine, centrifugal fan and centrifugal pump. Concurrent: ME 103-104. 2 s.h. STAFF

ME 150-151. MACHINE DESIGN.—Application of the principles of mechanics, strength of materials, constructive processes and engineering drawing to the design of machines and the analysis of machine elements, followed by the design of at least one complete machine. ME 150 has one recitation and three laboratory hours; ME 151 has three recitations and six laboratory hours. Prerequisite: Engineering 107, Engineering 109, ME 52. Concurrent with ME 107. 7 s.h.

ASSISTANT PROFESSOR LEWIS AND MR. CALLISON

ME 153-154. HEATING, AIR CONDITIONING AND REFRIGERATION.—A fundamental course with emphasis on the theoretical basis of the subject. Determination of heat losses and gains; design of steam and hot water heating systems; panel heating. Fundamentals of refrigeration theory and design. Laboratory experiments combining rating and testing with demonstrations of principles. Prerequisite: ME 102 or ME 104, ME 106. Concurrent: ME 159-160. Three recitations, three laboratory hours in alternate weeks. 7 s.h.

PROFESSOR REID

ME 155. INTERNAL COMBUSTION ENGINES.—Principal cycles; fuels and fuel mixtures; effect of real mixtures on theoretical cycles; combustion, carburetion and fuel injection. Thermodynamic analysis of engine performance. Modern development in the internal combustion engine. Prerequisite: ME 101-102. 3 s.h.

ASSISTANT PROFESSOR ELSEVIER

ME 157. *PUMPS, COMPRESSORS AND TURBINES.—An introduction to the theory and design of centrifugal pumps and compressors, axial-flow compressors, impulse and reaction turbines, and gas turbine plants. Includes combustion systems and regenerators. Prerequisite: ME 102, ME 103, ME 106. 3 s.h.

PROFESSOR KENYON

ME 158. INDUSTRIAL ENGINEERING.—A study of the growth and present tendencies of productive industries as concerns the engineer. Specific topics treated are: plant location, organization, production and cost controls, wage payment, etc. Seniors only. 3 s.h.

PROFESSOR KENYON AND ASSISTANT PROFESSOR LEWIS

ME 159-160. SENIOR MECHANICAL ENGINEERING LABORATORY.—Open only to mechanical engineering students. First semester 2 s.h.: experiments and reports on performance and economy of internal combustion engines, centrifugal pump and fan, steam engine and turbine, flow in ducts, heat exchanger. Second semester, 1 s.h.: experiments and reports on air compressors and steam power plant components; planning and executing original experiments. Prerequisite: ME 105, ME 106, ME 114.

STAFF

ME 162. POWER PLANTS.—A study of the economic and engineering factors affecting the location and selection of power plants and related equipment. Discussion of conventional and nuclear fuels, other energy sources, methods of power

* Offered only upon sufficient demand; enrollment limited.

production and control and safety problems in nuclear plants. Prerequisite: ME 102 or ME 104. 3 s.h. PROFESSOR KENYON

ME 163. ADVANCED MECHANICS.—An introduction to the dynamics of mechanical systems; equilibrium, stability, lumped and distributed systems, cradle and field balancing. Study of such systems by classical differential equations, mechanical impedance, operational calculus and analog simulation. Prerequisite: Mathematics 53, ME 151. 3 s.h. PROFESSOR MACDUFF

ME 164. *ENGINEERING ANALYSIS.—A study of a series of engineering problems with particular reference to mathematical and graphical methods of solution and engineering interpretation of results. 3 s.h. ASSISTANT PROFESSOR WILBUR

ME 166. *AIR CONDITIONING DESIGN.—Analysis of air-conditioning requirements, summer and winter, commercial and industrial. Design of systems and units; selection of equipment. Prerequisite: ME 153. 3 s.h. PROFESSOR REED

ME 171. INSTRUMENTATION.—An introduction to the basic fundamentals of instrumentation and of the control of processes and systems, with emphasis on the principles and accuracy of measurements. Open to seniors only. One recitation, three laboratory hours. 2 s.h. PROFESSOR MACDUFF

ME 173-174. MECHANICAL ENGINEERING SEMINAR.—A course designed to keep the students abreast of progress in the engineering field and to develop their ability to express ideas effectively in speech and writing. Each student gives at least one major presentation. Open to seniors only. First semester, 2 s.h.; second semester, 1 s.h. STAFF

ME 197-198. PROJECTS IN MECHANICAL ENGINEERING.—This course may be assigned by the Chairman of the Department to certain seniors who express a desire for such work and who have shown aptitude for research in one distinct field of mechanical engineering. Either semester or both semesters. 1-6 s.h. STAFF

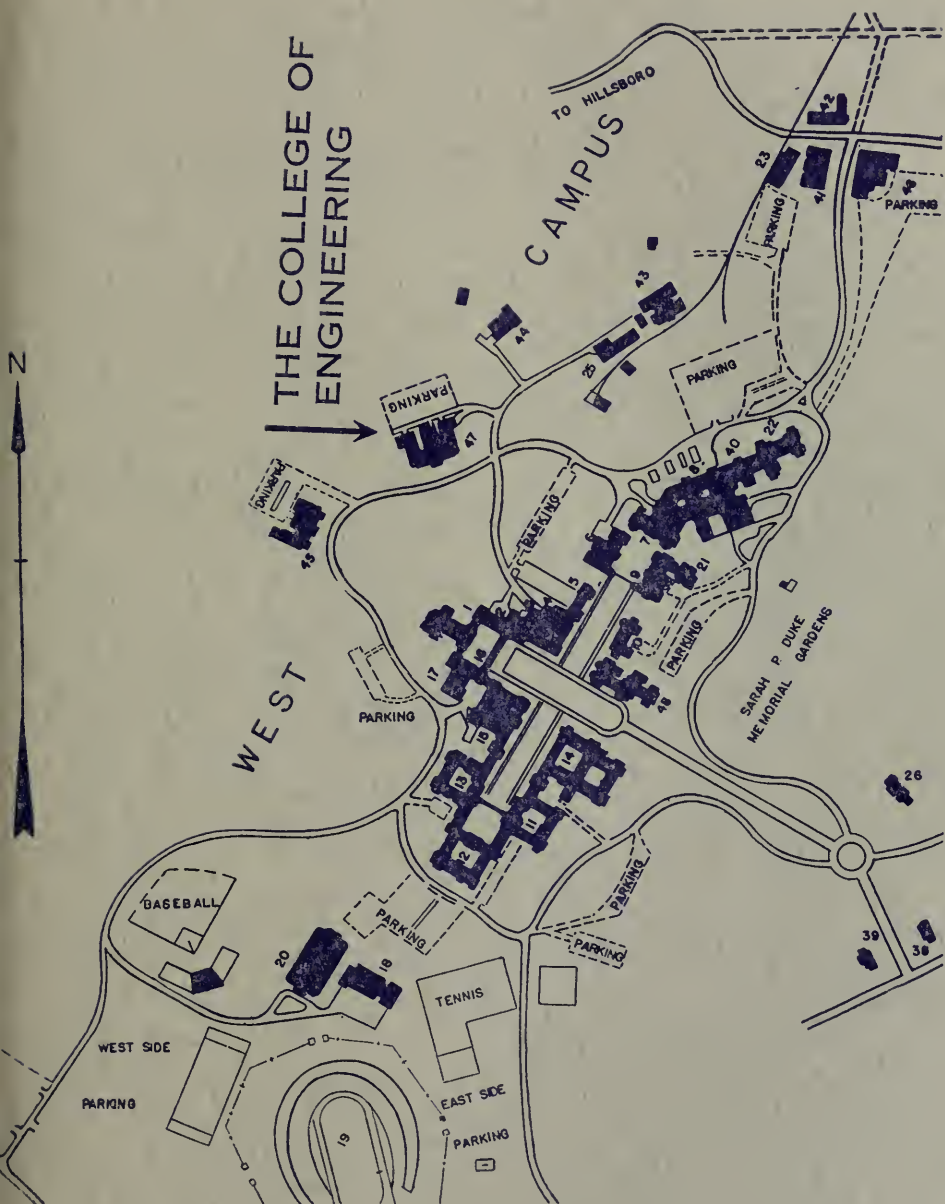
* Offered only upon sufficient demand; enrollment limited.

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BULLETIN
OF
DUKE UNIVERSITY



The School of Forestry

ANNOUNCEMENTS FOR 1957-58

VOLUME 29

January, 1957

NUMBER 3-A

Annual Bulletins

For GENERAL BULLETIN of Duke University, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF UNDERGRADUATE INSTRUCTION, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE COLLEGE OF ENGINEERING, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES, apply to *The Dean of the Graduate School*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF FORESTRY, apply to *The Dean of the School of Forestry*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF LAW, apply to *The Dean of the School of Law*, Duke University, Durham, N. C.

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For BULLETIN OF THE SCHOOL OF NURSING, apply to *The Dean of the School of Nursing*, Duke University, Durham, N. C.

For BULLETIN OF THE DIVINITY SCHOOL, apply to *The Dean of the Divinity School*, Duke University, Durham, N. C.

For BULLETIN OF THE SUMMER SESSION, apply to *The Director of the Summer Session*, Duke University, Durham, N. C.

Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

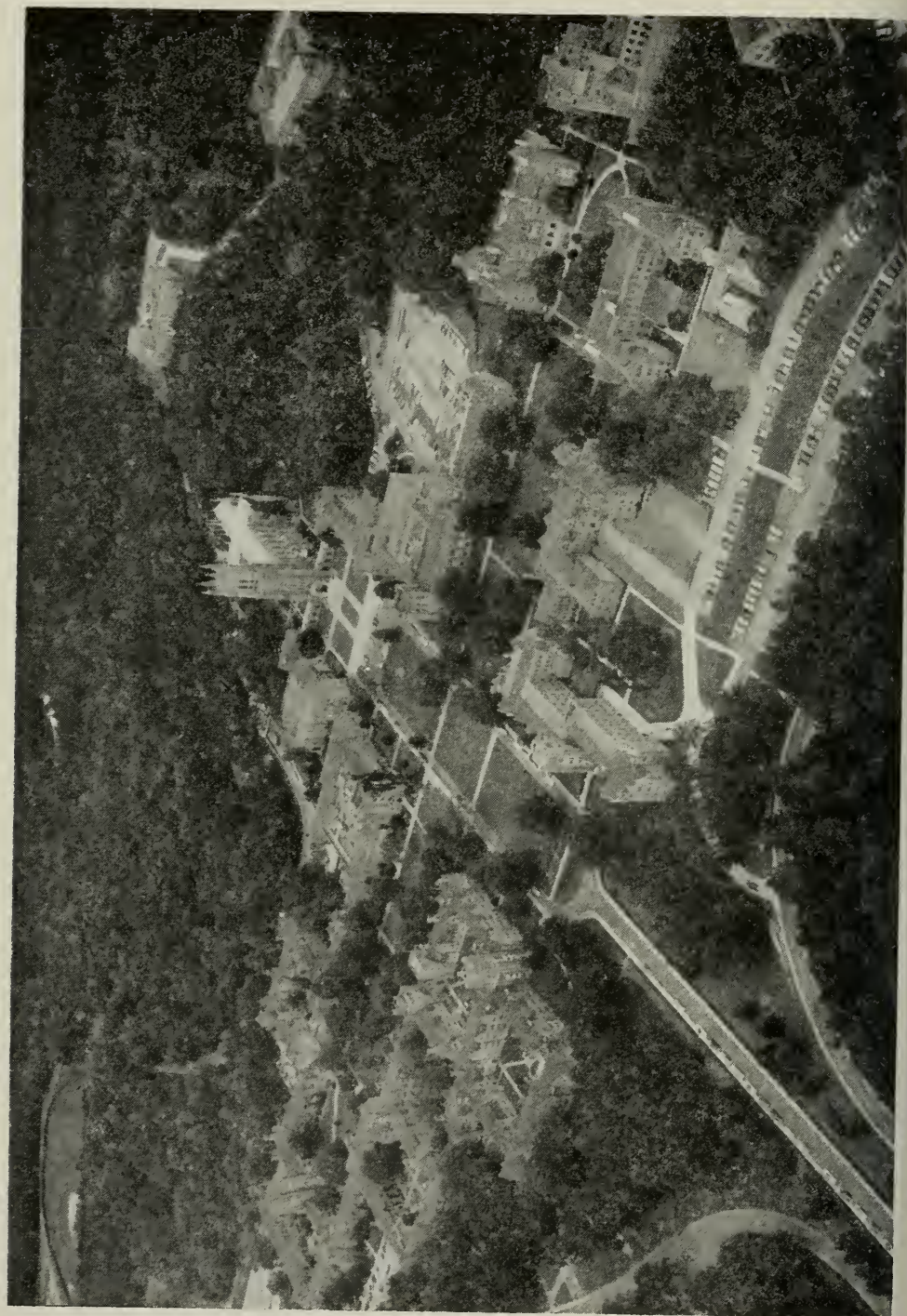
BULLETIN
OF
DUKE UNIVERSITY

THE SCHOOL OF FORESTRY



ANNOUNCEMENTS FOR 1957-58

DURHAM, NORTH CAROLINA
1957



DUKE UNIVERSITY. WEST CAMPUS WITH PORTION OF DUKE FOREST IN BACKGROUND

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School of Forestry Calendar



1957

June	11	Tuesday—Registration of students for summer work in forestry.
June	12	Wednesday—Field work in Plane Surveying (C.E. S110) begins.
July	10	Wednesday—Field work in Forest-Tree Identification (For. S149) begins.
July	17	Wednesday—Field work in Forest Surveying and Aerial Photo Interpretation (For. S150) begins.
August	14	Wednesday—Field work in Forest Mensuration (For. S151) begins.
September	17	Tuesday—Registration of students in the School of Forestry.
September	19	Thursday—Instruction begins in the School of Forestry.
October	21	week of, German examinations for candidates for doctorate degrees. Candidates register in the Graduate School Office for these examinations not later than October 11.
November	27	Wednesday, 12:30 P.M.—Thanksgiving recess begins.
December	2	Monday, 8:00 A.M.—Instruction is resumed.
December	11	Wednesday—Founders' Day.
December	21	Saturday, 12:30 P.M.—Christmas recess begins.

1958

January	6	Monday, 8:00 A.M.—Instruction is resumed.
January	10	French examinations for candidates for doctorate degrees. (Place to be announced.) Candidates register in the Graduate School Office for these examinations not later than December 20, 1957.
January	14	Tuesday—School of Forestry mid-year examinations begin.
January	24	Friday—School of Forestry mid-year examinations end.
January	28	Tuesday—Registration of students in the School of Forestry.
January	30	Thursday—Second semester begins.
March	22	Saturday, 12:30 P.M.—Spring recess begins. School of Forestry Coastal Plain field work begins.
March	31	Monday, 8:00 A.M.—Instruction is resumed.
April	7	Monday, 8:00 A.M.—Coastal Plain field work ends.
April	11	French examinations for candidates for doctorate degrees. (Place to be announced.) Candidates register in the Graduate School Office for these examinations not later than April 4.
April	15	Tuesday—Last day for submitting Doctor of Forestry theses.
May	5	week of, German examinations for candidates for doctorate degrees. Candidates register in the Graduate School Office for these examinations not later than April 25.
May	15	Thursday—Last day for submitting Master of Forestry theses.
May	19	Monday—School of Forestry final examinations begin.
May	29	Thursday—School of Forestry final examinations end.
May	31	Saturday—Commencement begins.
June	1	Sunday—Commencement sermon.
June	2	Monday—Commencement Address and Graduating Exercises.

Officers of Administration



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LEON EDWARD CHAIKEN, M.F. <i>Associate Professor of Forest Management</i>	2737 Dogwood Road
ELLWOOD SCOTT HARRAR, M.S., Ph.D. <i>Professor of Wood Technology</i>	2228 Cranford Road
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PAUL JACKSON KRAMER, M.Sc., Ph.D. <i>James B. Duke Professor of Botany</i>	2251 Cranford Road
CHARLES WILLIAM RALSTON, M.F., Ph.D. <i>Assistant Professor of Forest Soils</i>	600 N. Gregson Street
FRANCIS XAVIER SCHUMACHER, B.S. <i>Professor of Forestry</i>	6 Sylvan Road
*CARL HENRY STOLTENBERG, M.F., Ph.D. <i>Assistant Professor of Forest Economics</i>	2733 Dogwood Road
ALBERT EDWARD WACKERMAN, M.F. <i>Professor of Forest Utilization</i>	3610 Dover Road, Hope Valley

Associate Faculty

JOSEPH RANDLE BAILEY, Ph.D. <i>Assistant Professor of Zoology</i>	2117 Sprunt Street
WILLIAM DWIGHT BILLINGS, Ph.D. <i>Associate Professor of Botany</i>	708 Louise Circle, Poplar Apts.
ROMANE LEWIS CLARK, Ph.D. <i>Assistant Professor of Philosophy</i>	Apt. 10, Fifth and Markham Ave.
IRVING EMERY GRAY, Ph.D. <i>Professor of Zoology</i>	124 Pinecrest Road
CALVIN BRYCE HOOVER, Ph.D., Litt.D. <i>James B. Duke Professor of Economics</i>	1702 Duke University Road
RALPH ELTON LEWIS, M.S. in M.E. <i>Assistant Professor of General Engineering</i>	1401 Alabama Avenue
AUBREY WILLARD NAYLOR, Ph.D. <i>Associate Professor of Botany</i>	881 Louise Circle, Poplar Apts.
HENRY JOHN OOSTING, Ph.D. <i>Professor of Botany</i>	2642 University Drive
HAROLD SANFORD PERRY, Ph.D. <i>Associate Professor of Botany</i>	2302 Cranford Road
JOHN HENRY SAYLOR, Ph.D. <i>Professor of Chemistry</i>	2500 Perkins Road
* Resigned August 31, 1956.	

ROBERT SIDNEY SMITH, Ph.D. <i>Professor of Economics</i>	2236 Cranford Road
JOSEPH JOHN SPENGLER, Ph.D. <i>James B. Duke Professor of Economics</i>	2240 Cranford Road
HOWARD AUSTIN STROBEL, Ph.D. <i>Assistant Professor of Chemistry</i>	1013 Dacian Avenue
WARREN CHASE VOSBURG, Ph.D. <i>Professor of Chemistry</i>	2319 Englewood Avenue
KARL MILTON WILBUR, Ph.D. <i>Professor of Zoology</i>	2415 Club Boulevard

Duke Forest Staff

CLARENCE FERDINAND KORSTIAN, M.F., M.A., Ph.D. <i>Director</i>	4 Sylvan Road
LEON EDWARD CHAIKEN, M.F. <i>Assistant Director</i>	2737 Dogwood Road
MANLY RANKIN BLACKMON <i>Superintendent</i>	2321 Erwin Road
*ALEXANDER T. DAVISON, M.F. <i>Acting Superintendent</i>	Hope Valley
MRS. ELIZABETH KEITH <i>Bookkeeper</i>	1202 Eva Street

Duke Arboretum

ELLWOOD SCOTT HARRAR, M.S., Ph.D. <i>Director</i>	2228 Cranford Road
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Senior Research Associate

†WILLIAM GUSTAVUS WAHLENBERG, M.F.	22 Westover Drive, Asheville, N. C.
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Technical Assistants in Forestry

‡MYKYTA VICTOR BILAN, M.F.	Men's Graduate Center
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Assistants in School Administration

MRS. NANCY A. McMANNEN <i>Recorder and Secretary to the Dean</i>	311 N. Maple Street
LOUISE H. TROY <i>Secretary</i>	1013 Demerius Street
MRS. RACHEL B. KOUNTIS <i>Secretary</i>	207 Elliot Street
‡MRS. JEAN W. WALKER <i>Statistical Clerk</i>	1817 Vale Street

* Resigned January 31, 1957.

† Effective December 19, 1955.

‡ Employed part-time.

Forestry in Duke University



General Statement

DUKE UNIVERSITY, located at Durham, North Carolina, comprises Trinity College, the Woman's College, the College of Engineering, the Graduate School of Arts and Sciences, the Divinity School, and the professional schools of Forestry, Law, Medicine, and Nursing. Nearly every state of the Union and several nations are represented in the student body of more than five thousand, not including the enrollment in the Summer Session.

The University goes back in its origin to 1838, when Union Institute was founded in Randolph County by the Methodists and Friends. In 1851 the institution became Normal College, one of the first schools in America for the training of teachers. In 1859 the name was changed to Trinity College and so continued until 1924, when the College became a part of Duke University.

By virtue of an indenture of trust, executed December 11, 1924, by James Buchanan Duke, a great benefaction was placed at the disposal of humanity by providing for hospitalization, church work in rural communities, and education. The principal feature of the educational provision was the creation of Duke University.

The University occupies two campuses. The Woman's College campus, with its 108 acres, was formerly the campus of Trinity College. About a mile to the west are the new units of the University. The new campus, totaling 467 acres, also known as the West Campus, was first occupied in September, 1930.

Forestry in Duke University began early in 1931, when, through placing the Duke Forest under intensive management for forestry purposes, a substantial beginning was made in laying the foundation for educational work and research in forestry.

An academic-forestry curriculum, designed for students intent upon pursuing the study of forestry, particularly as a profession after graduation, was organized in Trinity College of Duke University in 1932 (see *Announcement on Undergraduate Instruction in Duke University*). This course of study provides only for instruction in fundamental and auxiliary subjects basic to a proper understanding of the highly specialized work in technical forestry. Duke University offers no professional degree in technical forestry available to undergraduates.

Training in technical forestry leading to the professional degrees, Master of Forestry and Doctor of Forestry, is offered in the School of Forestry, and is open to graduates of recognized scientific schools or colleges, universities, and professional schools of forestry and to other men who meet the entrance requirements of the school (see p. 20).

Duke University is also prepared to offer, through the Graduate School of Arts and Sciences, graduate work in the more scientific aspects of forestry leading to the Master of Arts and Doctor of Philosophy degrees. This work is available to graduates of schools of forestry of recognized standing, and to college or university graduates holding the Bachelor's degree with their major work in appropriate scientific subjects. Students who have had no previous training in forestry, but who are contemplating work toward either the Master of Forestry or Doctor of Forestry degree should include in their undergraduate preparation at least two full years in botany, including general morphology or anatomy, the taxonomy, physiology, and ecology of plants; at least one course in zoology or general biology; courses in chemistry, physics, geology, economics, mathematics; and at least two years of French or German.

Several staff members of the Southeastern Forest Experiment Station are engaged in cooperative research projects in the Duke Forest. Specialists from this station and other prominent members of the U. S. Forest Service and representatives of forest and wood-using industries give occasional scheduled lectures at the School.

Educational Facilities

The School of Forestry is located in the Social Science and Biology Buildings on the West Campus. The School is provided with instruments and tools for use in both field and laboratory work in silvics, silviculture, harvesting, and forest mensuration. Modern surveying instruments and accessory equipment are available for work in forest surveying.

Fully equipped laboratories are provided for work in forest entomology, wood anatomy and properties, timber mechanics, and bonding of wood. A modern forest soils laboratory equipped for physical and chemical studies is available. In the field of seasoning and preservation of wood, a laboratory fully equipped with an experimental dry kiln, pressure treating cylinder, and vapor drying cylinder is available for instruction and research.

Facilities are also available for advanced work in plant physiology, plant anatomy, plant taxonomy, genetics, plant ecology, plant pathology, and the several branches of zoology.

The School of Forestry Library contains a growing collection of material on forestry and related subjects. It includes important books

and periodicals in English and in French, German, and other foreign languages. The Library is well provided with American material, including Federal and State documents and reports. Over 150 periodicals and serials of importance in forestry and related fields are received by subscription or exchange.

Greenhouses, connected to the Biology Building through a soil-storage and work room, provide adequate space for experimental work.

A nursery has been established by the University for joint use of the Sarah P. Duke Floral Garden, the Botany Department, and the School of Forestry. The forestry section of this nursery is used mainly for the growing of planting stock for the Arboretum and trees needed for research or other special purposes.

West Virginia Pulp and Paper Company has made available to Duke University a field headquarters for work in forests of the South Atlantic Coastal Plain located 18 miles northwest of Summerville, South Carolina. This company has extensive forest holdings under close supervision of a staff of technical foresters in South Carolina and permits access to its lands for instruction and research in forestry and allied fields. This headquarters camp with modern facilities for as many as 45 men is used as a base primarily for utilization work each spring and for special work in silviculture. The quarters may be available at other times for students and faculty members of the Duke School of Forestry working on special problems or doing advanced work in any of the fields of forestry concerned with coastal plain problems. The establishment of this headquarters camp in the coastal plain region makes it possible for the School of Forestry to provide instruction and conduct research in this important forest area in which many privately owned forests as well as public forests are intensively managed for the production and utilization of a wide range of forest products.

The School sponsors occasional lectures on forestry and conservation by speakers of national reputation.

An active Forestry Club is maintained as a student organization to bring the members of the School and students in the undergraduate academic-forestry curriculum into closer contact and to afford opportunities for extracurricular activities not otherwise available.

The Duke Forest

The Duke Forest, located in Durham and Orange counties, North Carolina, consists of five main units: namely, the Durham, New Hope Creek, Hillsboro, Eno, and Blackwood divisions. Early in the development of Duke University it was recognized that the possession of such an area offered an unusual opportunity for the development of educational work in forestry.

Situated on the lower Piedmont plateau at elevations ranging from 280 to 760 feet, and composed of second-growth shortleaf, loblolly, and Virginia pines, oak, gum, hickory, maple, yellow-poplar, ash, and other hardwoods, the Forest is representative of the various types of timber growth found throughout the region. Over a hundred different species of trees are found within or near the Forest. The land is rolling and there is relatively little rock outcrop, swamp, or other land of low productivity for timber growing. The total area of the Forest proper, exclusive of the University campus, is approximately 7,200 acres.

In developing the Duke Forest the following objectives are being emphasized:

1. Demonstration of various methods of timber growing, silvicultural treatment, and forest management applicable to the region.

2. Development as an experimental forest for research in the problems of timber growing and in the sciences basic thereto. In spite of the present timber situation and the accompanying economic ills, the technical and scientific knowledge required to handle forest crops efficiently on a permanent basis is still largely lacking. The Duke Forest affords a place where studies may be carried on to augment this knowledge for the large region of which the local forest and soil conditions are representative.

3. To serve as an outdoor laboratory where field work can be carried on by forestry students under the guidance of the Forestry Faculty. One of the most difficult problems in forestry education is to bring the students into contact with the realities of professional activities. With all operations in the Forest, both routine and research, recorded annually, it is possible for a qualified man to get in a short time a degree of practical knowledge or technical expertness which only an organized forest can provide.

The Duke Forest is particularly well located to serve as a field laboratory, since most of it is adjacent and easily accessible to the University campus. In fact, the Durham division practically surrounds the West Campus, which was laid out in one corner of the Forest. A paved state highway runs lengthwise through the Durham division, and several good roads cross the Forest. About fifteen miles of improved woods roads make all parts of the Forest readily accessible. A five-minute walk will take one well into the Forest, and any part of the Durham or New Hope Creek divisions can be reached by automobile in from ten to twenty minutes. At few other places in America can be found provisions for forestry training and research which includes the necessary forest literally at the door of a large university with its instructional, laboratory, and library facilities.

Approximately 1,400 acres of the Forest was open land, which had been under cultivation prior to the establishment of the Forest. Such of the open land as was not restocking naturally to forest trees was

planted. Arbitrarily by mixing species and varying the spacing between the trees in the plantations, the foundation was laid for future research into many perplexing problems, such as species relationships and requirements, the most desirable spacing and species to use in this region, and the survival and relative rates of growth of the different species of trees. To date approximately 1,400 acres of such plantations have been established. Pulpwood thinnings on a commercial basis are now being made in a number of the older pine plantations.

A large number of permanent sample plots, ranging in size from one-tenth acre to over one acre, have been laid out in the Forest to study various problems. The plots are distributed through all the forest types, and range in purpose from studies of the effects of various silvicultural practices to studies of rates of growth and yields of the different timber types. Accurate records are kept on all this work, which will provide excellent material for student research. In the future many of these plots can also be used to demonstrate desirable forestry practices.

The development of the Forest as a demonstration of practical forest management is well advanced. Forest type and timber stand maps are available for each of four divisions except for recently acquired areas. A detailed soils map for the entire area is being prepared. Except for very recent acquisitions, each division has been subdivided into permanent compartments, and plans for the silvicultural treatment of each stand and working group have been formulated. The third ten-year inventory of the Forest resources has been completed and the results of management practices during the past twenty years are being assembled and will soon be available.

Cutting operations within the limits of annual growth are being carried on, and, as markets for definite products are developed or expanded, such operations will be increased. To date, approximately 1,300 acres in the pine types have been thinned. These thinnings serve the dual purpose of contributing to the operation of the Forest as a going business and of demonstrating sound forestry practices. An efficient fire protection organization has been developed in cooperation with the State and Federal governments, and forest fire losses are being held to a minimum. In managing the Forest, public recreation activities are recognized. Several recreation areas have been established, and over ten thousand picnickers, hikers, and horseback riders use the area annually. The Durham and New Hope Creek divisions of the Forest, together with several hundred acres of neighboring privately owned land, are incorporated in an Auxiliary State Game Refuge, and a number of wildlife management practices are being applied to designated areas in the Forest to provide the necessary food and protection which will ultimately result in an increased amount of game in the surrounding territory. Records are being maintained of

all activities in the Forest, and these records will become increasingly useful as they are improved as a result of further experience and research. With the diversification and expansion of activities now going on, students have an opportunity to study an operating forest in all its phases and to obtain a grasp of the proper balance between theory and practice.

The Forest is admirably located for research in forest soils. An unusually large number of different soil conditions occur in the Forest because of the diversity of parent rock, topography, and past land culture. Major soil differences are due to the nature of the parent material which includes the basic rock of the Carolina Slate formation, granites, Triassic sedimentary rock, and many types of basic intrusives.

An exceptionally good opportunity exists for the conduct of forest research by graduate students due to the wide range in forest types, ages, and soil conditions within the Forest and its proximity to the laboratories, greenhouses, and other scientific equipment and library facilities of the University. Research is being conducted on special problems, particularly in the fields of silvics, forest soils, forest-tree physiology, forest entomology, forest pathology, silviculture, forest management, and wood technology. The Forest is used not only for research in forestry but also for research in forest biology by members of allied departments.

The Arboretum

Of outstanding value in the teaching of both forestry and botany in the future is the provision for the development of an arboretum. Recently the Board of Trustees of Duke University voted to set aside permanently an area of over 90 acres to be used for arboretum purposes. The area lies between the East and West campuses along either side of Myrtle Drive. This is naturally a long-time project, and many years will elapse before the Arboretum will be most useful and most attractive. The University Trustees' Committee on Forestry in its report to the Board refers to the Arboretum as follows:

"The Arboretum should serve as a station for the study of trees and woody plants as individuals and in small groups in their scientific relations, economic properties, and cultural characteristics, requirements, and possibilities. It should render an economic service by acting as a research laboratory where trees and shrubs can be studied from the viewpoint of a fuller utilization of their commercial possibilities. It should render a cultural service by serving as a center where foresters, landscape architects, nurserymen, gardeners, and the general public may increase their knowledge of indigenous trees and shrubs, and where they may become acquainted with the foreign spe-

cies that can be grown here. Within the University the Arboretum will supply living specimens and materials for several branches of botany and forestry."

The development of the Arboretum will proceed along these lines as rapidly as available funds and planting stock will permit.

Fellowships, Scholarships, and Graduate Assistantships in Forestry



A NUMBER of fellowships, scholarships, and research assistantships are available to men who offer promise of becoming leaders in the forestry profession. These will be awarded for high character and marked scholastic ability as judged by education, experience, and personal references.

Holders of the awards will pay tuition and such additional fees as are regularly required.

The awards are of three classes:

(1) *Fellowships*. Each recipient must have previously completed work equivalent to that required at Duke University for a Master's degree with major in forestry or in a discipline basic to forestry. He will devote his time to an approved program of study and research in any of the branches of forestry. He is expected to become a candidate for the degree of Doctor of Forestry or Doctor of Philosophy.

(2) *Scholarships*. Each recipient will normally devote his time to an approved program of study leading to the degree of Master of Forestry or Master of Arts with a major in forestry.

(3) *Graduate assistantships*. Each recipient will devote half-time to research or other work of the School of Forestry. He will be permitted to enroll for not more than 20 semester hours in a school year on a program of study, or study and research, leading to the degree of Master of Forestry, Master of Arts, Doctor of Forestry, or Doctor of Philosophy.

The following arrangements are common to the above fellowships, scholarships and research assistantships in forestry:

(1) Each applicant must have met the entrance requirements of the School of Forestry and must show high scholarship.

(2) It is highly desirable that each applicant state as specifically as possible the field in which he wishes to study. The definite selection of a major field of work—one that is specific in purpose and involves training both in fundamentals and in technique—is very helpful to the Committee on Awards.

(3) Application blanks for fellowships, scholarships, and research assistantships may be obtained by writing to the Dean of the School of Forestry, Duke University, Durham, North Carolina. When the blank has been filled out by the applicant, it should be returned to the above address, and an *official transcript of record* showing college

or university credits must accompany it or be forwarded promptly. The application and transcript must be filed not later than March 1 for consideration for the following academic year. In case vacancies occur, applications submitted on a later date may be considered.

Each year, upon the recommendation of a special awards committee, one fellowship in the amount of \$1,200 is awarded by the Union Bag and Paper Corporation, of Savannah, Georgia, to a graduate forester, selected on the basis of merit, ability and interest in the field of industrial forestry, for graduate study at the School of Forestry of Duke University. A fund of \$400.00 in addition to the fellowship stipend is available for payment of actual expenses incurred in the conduct of the recipient's research.

To be eligible for this fellowship an applicant must meet the following qualifications:

a. He must be a graduate of the School of Forestry, Alabama Polytechnic Institute; or School of Forestry, University of Florida; or George Foster Peabody School of Forestry of the University of Georgia; or School of Forestry, N. C. State College; or a resident of the State of Georgia and have earned at least a Bachelor's degree in forestry at another institution of higher learning.

b. He must have the quality-point grade average required for admission to the School of Forestry.

c. He must be of good character and show promise of ability to do creditable graduate work in forestry. This is evaluated by the awards committee on the basis of letters of recommendation, scholastic standing, a personal interview, and in such other ways as the committee may specify.

d. He must be interested in a career in a field of forestry that is concerned with the management, harvesting, or utilization of industrial forest properties, particularly in the South.

Those interested in applying for the Union Bag and Paper Corporation Forestry Fellowship should write to the Dean of the School of Forestry for application forms or for further information. Applications, with supporting papers, must be in the hands of the Committee not later than March 1 preceding the academic year for which the Fellowship will be granted. Announcement of the award will be made not later than April 1 of the same year.

In 1953 the Brunswick Pulp and Paper Company, of Brunswick, Georgia, established a five-year research project at the School for the purpose of developing information on the silviculture, management, and utilization of southeastern hardwood forests which are becoming increasingly important to forest industry. Active work on the project is conducted by a research fellow supported by the grant. Those interested in applying for the Brunswick Pulp and Paper Company Fellowship should correspond with the Dean of the School.

Tuition, Fees and Expenses



THE following table shows the general fees and charges collected from all students. All fees for each semester are due and payable, unless otherwise specified, at the time of registration at the beginning of that semester, and no student is admitted to classes until arrangements have been made with the Treasurer of the University for the settlement of fees.

General Fees

Tuition, per semester.....	\$225.00
General Fee, per semester.....	60.00

Forestry students may obtain admission to all regularly scheduled University athletic contests held on the University grounds during the entire academic year by payment of the athletic fee of \$10.00 per year plus any Federal taxes that may be imposed. This fee is payable in the fall semester.

TRANSCRIPTS: A student desiring to transfer from Duke University to another institution is entitled to one transcript of his record. A charge of one dollar is made for each additional copy.

PAYMENTS TO FELLOWS AND SCHOLARS: Payments by the University of stipends to fellows, research assistants, and scholars are made in eight monthly installments, beginning October 20. Fellows and scholars are required to pay the regular tuition fee and such additional fees as are ordinarily required of graduate students.

Living Accommodations

The Men's Graduate Center is available to men of the graduate and professional schools. It contains bedroom facilities for four hundred men, complete with lounges, study rooms, recreational rooms, post office and dining hall. The rooms are equipped for two persons and the rental charge for a double room is \$350.00 for the academic year, or \$175.00 for each occupant, or \$87.50 for each occupant each semester.

Rooms are rented for a period of not less than one semester, and without special arrangements, the rate is \$1.00 per day with a minimum charge of \$25.00.

Room reservations are made through the Housing Bureau only

after official acceptance for admission to the University. A \$25.00 room deposit is required of each applicant before a room reservation is made. The initial room deposit is effective during the student's residence in the University if attendance is continuous in regular academic years. This deposit will be refunded under the following conditions:

- a. Within thirty days after the student has been graduated.
- b. Upon withdrawal from the University, provided written notice is received in the Housing Bureau by August 1, for cancellation of a reservation for the fall semester; and not later than January 15, for cancellation of a reservation for the spring semester.
- c. When the reasons requiring withdrawal are beyond the student's control.

No refund is made until the occupant has checked out of his room through the Housing Bureau and has settled all of his account with the Treasurer.

A resident student, in order to retain his room for the succeeding academic year, must make application at the office of the Housing Bureau for confirmation of the reservation in accordance with the plan that is published during the school year.

Any exchange of rooms must be arranged at the Housing Bureau. Persons exchanging rooms without the approval of the Housing Bureau will be subject to charges for both rooms.

The authorities of the University do not assume responsibility for the persons selected as roommates. Each student is urged to select his roommate when the room is reserved.

Beds and mattresses (39"x74"), tables, chairs, dressers, mirrors, and window shades are furnished by the University. The student supplies linens, blankets and pillows. Rugs, totaling not more than 54-square-feet, study lamps and curtains are permissible, and if desired, are furnished by the students.

Duke University desires to provide for its students a residential environment conducive to academic achievement, the development of high ideals, and sound character. The institution asks and believes that each student will cooperate in achieving these aims by arranging his personal belongings in an orderly manner, by caring for the buildings and furniture as he would do in his own home, and by observing a code based on gentlemanly behavior in an educational environment which demands respect for all residents. Regulations governing the occupancy of rooms will be supplied directly from the Housing Bureau when room reservations are made. Occupants are expected to abide by these regulations.

ESTIMATED EXPENSES FOR AN ACADEMIC YEAR: The necessary expenses of a graduate student are moderate: the University dormitories provide thoroughly comfortable and wholesome living con-

ditions at a minimum cost, while all charges made by the University have been kept low. Incidental expenses naturally depend upon the tastes and habits of the individual. The following table gives the necessary college expenses for one year:

	<i>Low</i>	<i>Moderate</i>	<i>Liberal</i>
Tuition	\$ 450.00	\$ 450.00	\$ 450.00
General Fee	120.00	120.00	120.00
Room-rent	175.00	175.00	225.00
Board	450.00	500.00	525.00
Laundry	25.00	30.00	35.00
Books	30.00	40.00	50.00
Athletic Fee (optional)	10.00	10.00	10.00
<i>Total</i>	<u>\$1,260.00</u>	<u>\$1,325.00</u>	<u>\$1,415.00</u>

Requirements for Admission to the School of Forestry



THE admission requirements of the School of Forestry for work toward the Master of Forestry degree presuppose that an applicant is either:

1. A graduate of a scientific school, college, or university of high standing, but without professional training in forestry, or
2. A graduate of a professional school of forestry, or
3. A student who has successfully completed the pre-forestry curriculum of one of the institutions cooperating with the School of Forestry, as indicated on pages 22 and 23.

Each applicant must present a certified transcript of his academic record showing the courses he has taken, the number of credit hours he has earned and the grades received. The total number of quality points* must be at least two and one half times the total credit hours to meet the minimum scholastic standards required for admission to the School. An applicant also must have satisfactorily completed undergraduate work in minimum amount, as follows:

One year of biology, including at least one semester of botany, or one year of botany.

One year each of English composition and of chemistry.

One course each in physics and in the principles of economics.

Mathematics, through college algebra and trigonometry.

It is urged that an applicant without professional training in forestry present additional credits in the above subjects and in one or more of the following subjects: soils, geology, mineralogy, petrology, climatology, surveying, languages (particularly German and French), sociology, political science, philosophy, psychology, and zoology.

An applicant who is a graduate of a professional school of forestry will present a certified transcript of scholastic record showing the award of a degree. Before registering for the first semester of residence, such applicants will be required to select the branch or branches of forestry in which they wish to concentrate the major part of their work and to prepare their proposed programs in conference with the appropriate faculty adviser. Ordinarily graduates of a fully accredited

* Grades for each hour of college credit and also for credit earned in the School of Forestry are valued in quality points as follows: "A," 4 points; "B," 3 points; "C," 2 points; "D," 1 point; and "F," no points.

school of forestry should be able to meet all requirements for the Master of Forestry degree in one full school year of resident study; others will require a longer period of residence.

Students must make application for admission in advance of the opening of the school year. Those students entering without acceptable courses in plane surveying, forest-tree identification, forest surveying, and forest mensuration must take the work in these subjects in the Summer Session, and are required to submit their applications prior to May 1. Students entering with advanced standing in all four courses should make application before September 1. Application blanks will be sent upon request made to the Dean of the School of Forestry.

Cooperative Plan of Study with Selected Colleges and Universities



AWARE of the far reaching values to be derived from training in the liberal arts and sciences, the Duke School of Forestry, since its inception, has had the cooperation of Trinity College, the men's undergraduate college of arts and sciences of Duke University, in preparing students for professional careers in forestry. Under the plan a student devotes his first three years to a coordinated and carefully integrated program of study in the basic arts and sciences in Trinity College. The summer between his junior and senior year and the two following school years are spent in the School of Forestry. Upon the successful completion of this five-year course of study, a student has earned the Bachelor of Science degree from Trinity College and the professional Master of Forestry degree from the Duke School of Forestry.

Based upon the experience and success of this cooperative program with Trinity College, the School of Forestry in 1952 initiated similar programs of collaboration with a selected group of colleges and universities located throughout the United States. These programs offer students the numerous advantages of a broad background in liberal arts and sciences as preparation for later professional training. A student intent upon following such a course of study should make application to one of the colleges listed below. Admission requirements and other information pertinent to matriculation may be obtained from each of these institutions. Not later than the end of the first semester of the third year in the college or university of his choice, the student must make formal application for admission to the Duke School of Forestry. To qualify for admission under these programs, a student must have followed a planned course of study arranged in consultation with his advisor, must have the official recommendation of his college, and must meet the minimum requirements for admission to the Duke School of Forestry.

Cooperating Institutions

(as of the date of publication)

Albion College.....	Albion, Michigan
Albright College.....	Reading, Pennsylvania
Baldwin-Wallace College.....	Berea, Ohio

Baylor University, College of Arts and Sciences.....	Waco, Texas
Beloit College.....	Beloit, Wisconsin
Bridgewater College.....	Bridgewater, Virginia
Butler University, College of Liberal Arts and Sciences.....	Indianapolis 7, Indiana
Capital University, College of Arts and Sciences.....	Columbus 9, Ohio
Carson-Newman College.....	Jefferson City, Tennessee
Catawba College.....	Salisbury, North Carolina
Centenary College of Louisiana.....	Shreveport, Louisiana
Centre College of Kentucky.....	Danville, Kentucky
Chattanooga, University of, College of Liberal Arts.....	Chattanooga 3, Tennessee
Colorado College.....	Colorado Springs, Colorado
Davis and Elkins College.....	Elkins, West Virginia
Denison University, A College of Liberal Arts and Sciences.....	Granville, Ohio
DePauw University, College of Liberal Arts.....	Greencastle, Indiana
Doane College.....	Crete, Nebraska
Drew University, College of Liberal Arts.....	Madison, New Jersey
Duke University, Trinity College.....	Durham, North Carolina
East Tennessee State College.....	Johnson City, Tennessee
Elizabethtown College.....	Elizabethtown, Pennsylvania
Florida Southern College.....	Lakeland, Florida
Franklin and Marshall College.....	Lancaster, Pennsylvania
Furman University.....	Greenville, South Carolina
Gettysburg College.....	Gettysburg, Pennsylvania
Guilford College.....	Guilford College, North Carolina
Heidelberg College.....	Tiffin, Ohio
High Point College.....	High Point, North Carolina
Hofstra College.....	Hempstead, Long Island, New York
Howard College.....	Birmingham 6, Alabama
Illinois Wesleyan University, College of Liberal Arts.....	Bloomington, Illinois
Indiana Central College.....	Indianapolis 27, Indiana
Iowa Wesleyan College.....	Mount Pleasant, Iowa
Juniata College.....	Huntingdon, Pennsylvania
Kent State University, College of Liberal Arts.....	Kent, Ohio
Kentucky, University of, College of Arts and Sciences.....	Lexington, Kentucky
Lebanon Valley College.....	Annville, Pennsylvania
Lincoln Memorial University.....	Harrogate, Tennessee
Lycoming College.....	Williamsport, Pennsylvania
Marietta College.....	Marietta, Ohio
Miami University, College of Arts and Sciences.....	Oxford, Ohio
Middlebury College.....	Middlebury, Vermont
Millsaps College.....	Jackson, Mississippi
Moravian College.....	Bethlehem, Pennsylvania
Muhlenberg College.....	Allentown, Pennsylvania
Newberry College.....	Newberry, South Carolina
Otterbein College.....	Westerville, Ohio
Randolph-Macon College.....	Ashland, Virginia
Reed College.....	Portland 2, Oregon
Richmond, University of, Richmond College.....	Richmond, Virginia
Rollins College.....	Winter Park, Florida
Southwestern University, College of Arts and Sciences.....	Georgetown, Texas
Stetson University, College of Liberal Arts.....	DeLand, Florida
Thiel College.....	Greenville, Pennsylvania
Western Maryland College.....	Westminster, Maryland
West Virginia Wesleyan College.....	Buckhannon, West Virginia
Willamette University, College of Liberal Arts.....	Salem, Oregon
William Jewell College.....	Liberty, Missouri
William and Mary, College of.....	Williamsburg, Virginia
Wittenberg College.....	Springfield, Ohio
Wofford College.....	Spartanburg, South Carolina

Requirements for the Degree of Master of Forestry



THE requirements for the degree of Master of Forestry (M.F.) are governed by the extent of the student's previous professional training. Normally, students who have been awarded the degree of Bachelor of Science in Forestry, or equivalent, at an accredited school of forestry, may complete the requirements for the M. F. degree in one academic year. Students who have had no prior professional training in forestry are required to complete one summer session and two academic years of resident study. Work of equivalent grade done in residence at other institutions may, with the approval of the Faculty, be accepted as credit toward the degree, but a minimum of one year of residence at Duke University is required.

To qualify for the M.F. degree each student must have obtained at least two and one-half quality points per semester hour of credit under the quality-point system (see page 20).

The submission of a thesis for the M.F. degree is optional. In lieu of a thesis, and with the approval of the student's faculty adviser, an acceptable report on a special study will be required, credit for which will not exceed three semester hours. Those students who elect to submit a thesis will be required to file three copies of the thesis, type-written and bound in accordance with regulations set forth by the Faculty, in the Office of the Dean of the School of Forestry on or before May 15.

No student may take less than fourteen nor more than eighteen semester hours of credit without special permission of the Faculty.

ONE-YEAR PROGRAM

Students with satisfactory undergraduate professional training in forestry have considerable latitude in the selection of courses in a program developed in consultation with their advisers. They may devote a major portion of their time to research under the guidance of one or more members of the Faculty and submit a comprehensive thesis, or they may choose to devote their time in advanced courses and seminars. They may also take courses approved by the Faculty in other departments of the University. Thirty semester hours of credit are required for the Master of Forestry degree under the one-year program, of which at least fifteen semester hours of credit must be taken in the School of Forestry.

TWO-YEAR PROGRAM

Students who have had no prior professional training in forestry are required to begin their studies with a Summer Session term of thirteen weeks. In addition to the work in the Summer Session a total of not less than sixty semester hours is required for the M.F. degree, of which at least fifty shall have been obtained in the School of Forestry.

The course requirements for the two-year program are as follows:

SUMMER SESSION

	S.H.
Plane Surveying (C.E. S110).....	4
Forest-Tree Identification (F. S149).....	1
Forest Surveying and Aerial Photo Interpretation (F. S150).....	4
Forest Mensuration (F. S151).....	4

FIRST YEAR

First Semester

S.H.

Harvesting and Processing Forest Products (F. 211).....	3
Properties of Wood (F. 259).....	3
Forest Soils (F. 261).....	3
Economics of Forestry (F. 277).....	3
Electives	3

Second Semester

S.H.

Harvesting and Processing Forest Products Field Trip (F. 212).....	1
Forest Pathology (F. 224).....	3
Sampling Methods (F. 251).....	3
Dendrology (F. 253).....	3
Silvics (F. 264).....	3
Electives	2

SECOND YEAR

Two curricula in forestry are available after the common minimum requirements of the first year have been met. One is the SILVICULTURE-MANAGEMENT combination; the other is in FOREST PRODUCTS. The election of curriculum to be followed is made prior to the autumn semester of the second year. The required work in each curriculum is as follows:

SILVICULTURE-MANAGEMENT CURRICULUM

First Semester

S.H.

Forest Entomology (F. 231).....	3
Silviculture (F. 265).....	3
Applied Silviculture (F. 267).....	1
Economic Analysis in Forest Management (F. 279).....	3
Forest Management (F. 281).....	3
Thesis research or electives.....	2

Second Semester

S.H.

Soils and Silviculture Spring Trip (F. 266).....	1
Forest Protection (F. 274).....	2
Advanced Forest Management (F. 342).....	2
Thesis research or electives.....	10

FOREST PRODUCTS CURRICULUM

First Semester

S.H.

Seasoning and Preservation (F. 213).....	3
Silviculture (F. 265)	3
Forest Management (F. 281).....	3
Advanced Forest Utilization (F. 311).....	3
Thesis research or electives.....	3

Second Semester

S.H.

Forest Products Entomology (F. 232).....	3
Wood Anatomy (F. 260).....	3
Industrial Engineering (Eng. 158).....	3
Thesis research or electives.....	6

Requirements for the Degree of Doctor of Forestry



THE degree Doctor of Forestry (D.F.) is a professional and research degree conferred on those students who have satisfactorily completed specified requirements of advanced study and research. Although course work is a necessary part of a student's program, the mere accumulation of course credits will not be sufficient for the attainment of this degree. The granting of the D.F. degree is based primarily upon the student's thorough knowledge of a specialized field of study and upon the production of an acceptable dissertation embodying the results of original research. The general requirements, which are presented in the following paragraphs, ordinarily will be rigidly adhered to, although deviations in exceptional cases may be made with the approval of the Faculty of the School of Forestry.

The D.F. degree is offered with majors (also minors) in the following branches of forestry: forest economics, forest entomology, forest management, forest mensuration, forest pathology, forest soils, forest-tree physiology, forest utilization, silvics, silviculture, and wood and forest products technology.

Prospective students should correspond with the Dean of the School of Forestry on all matters pertaining to admission to the School.

ENTRANCE REQUIREMENTS: A prospective student must have received the degree of Master of Forestry, or its equivalent, from a school of forestry of recognized standing. His scholastic average for his undergraduate work must be at least $2\frac{1}{2}$ quality points, and that of his graduate studies three quality points per hour of credit.

An applicant must file a formal application for admission together with transcripts of his undergraduate and graduate academic records. In his application he should clearly state the branch of forestry in which he desires to concentrate, and if possible, the specific research.

The Committee on Admissions of the School of Forestry, together with the prospective student's major adviser, will determine if the qualifications of the applicant meet entrance requirements.

RESIDENCE REQUIREMENTS: The period of resident study beyond the M.F. degree or its equivalent is two years. Course work of equal grade taken at another college or university may, with Faculty approval, be accepted in partial fulfillment of the residence re-

quirement, but the last year of residence must be at Duke University. With the approval of the Faculty, one year of resident credit may be granted for work taken in the regular terms of the Summer Session of Duke University. Graduate work of a fragmentary nature taken over a period of several years will not meet the residence requirement.

PROGRAM OF STUDY: A committee consisting of five members of the Faculty will be appointed by the Dean to supervise the work of each student. This committee shall consist of a major adviser, a minor adviser and three other Faculty members. The major adviser will serve as Committee Chairman.

If the student's previous training is inadequate, he will be required to remedy such deficiencies as may be directed by his committee. The student, in consultation with his advisers, will prepare a program of study and research. The proposed program will be presented to the committee for consideration and acceptance, and then submitted to the Faculty of the School of Forestry for final approval. The minor requirement may be fulfilled by advanced course work or course work and research. Requirements for the minor will be established by the Faculty member in charge of the field. The minor may be taken in the School of Forestry, or in a related department, school, or college in the University.

A grade point average of at least three quality points per credit hour is required of all work toward the doctorate. (See page 20)

FOREIGN LANGUAGES: A reading knowledge of two foreign languages is required. One of these shall be either French or German; the other will be selected by the committee with the view toward determining the student's needs. The foreign language examinations will be conducted by the appropriate language departments or, for certain languages, by a qualified member of the Faculty of Duke University.

COMPREHENSIVE EXAMINATION: At least six months before the student expects to receive the D.F. degree, and after he has completed the foreign language requirement and most of his formal course work, he will be required to take a comprehensive preliminary examination. The examination will be written in subjects specified, and may be followed by an oral examination given by the committee. The decision as to whether the examination has been passed or failed is the responsibility of the committee.

Should the student fail the comprehensive examination he may apply for a second examination to be taken not earlier than six months after the first. Failure in the second examination renders the student ineligible to continue work for the D.F. degree at Duke University.

Upon satisfactory completion of the preliminary examination the student shall be considered a candidate for the D.F. degree.

DISSERTATION: In addition to obtaining adequate training in the field of his specialty, the student must demonstrate his ability to plan and conduct sound, original research. Evidence of this accomplishment must be presented in the form of an acceptable dissertation embodying the results of original work, which is a definite contribution to knowledge.

The subject of the dissertation must receive the approval of the Faculty, and the title filed with the Dean of the School of Forestry on or before October 15 of the academic year in which the candidate desires to take his final examination.

Four typewritten copies of the dissertation in approved form, must be deposited with the Dean of the School of Forestry on or before April 15 of the academic year in which the student expects to obtain the D.F. degree. The original and first carbon copy will be deposited in the University Library, the major adviser will receive one copy, and the fourth copy will be returned to the student.

The dissertation must be published either in its original form or in a modified form approved by the major adviser. In its published form the title page should include this statement: "A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Forestry in the School of Forestry of Duke University." In some instances an abstract, published in a recognized journal, will be considered as meeting the publication requirement.

The candidate must deposit a fee of \$50.00 with the Treasurer of the University on or before May 1 of the year the degree is to be conferred. If the dissertation is published in acceptable form within three years from the time the degree is granted, the deposit will be returned to the student upon receipt of 10 reprinted copies of the publication.

FINAL EXAMINATION: The final examination will be in defense of the candidate's dissertation and on related subject matter. It will be oral and will be conducted by the supervisory committee. At least six months must elapse between the dates of the preliminary and the final examinations.

Forestry in the Graduate School



MAJOR and minor work is offered in the scientific aspects of forestry leading to the A.M. and Ph.D. degrees, which are administered by the Graduate School of Arts and Sciences. Work for these degrees may be pursued only in forest-tree physiology, wood anatomy and properties, forest pathology, silvics, forest soils, forest mensuration, forest entomology, and forest economics. Students who have had specialized training in botany or soil science and in allied basic subjects, such as physics, chemistry, geology, and zoology, may pursue graduate study and research only in the specialized fields for which their previous work has qualified them. Students who do not have previous training in forestry will be required to complete a minimum of thirty semester hours of approved work in forestry as a preliminary requirement to advanced study for the A.M. and Ph.D. degrees. Holders of these degrees will not be regarded as professionally trained foresters.

Applicants for admission to the Graduate School must ordinarily have made, in their undergraduate work, not less than a "B" average and must not have concentrated excessively in one field of study to the detriment of a rounded program. They should have met substantially the requirements for the A.B. or B.S. degree at Duke University.

In addition to fulfilling the usual requirements for admission, the applicant must satisfy the Director of Graduate Studies in Forestry as to his liberal arts training, as well as to his preliminary training in the field of forestry.

For detailed information concerning admission to the Graduate School, and for regulations governing candidacy for the A.M. and Ph.D. degrees, language requirements, residence requirements, and other regulations concerning these degrees, the student should consult the *Bulletin* of the Graduate School of Arts and Sciences.

Courses and Subjects of Instruction



With the exception of the Summer Session courses, odd-numbered courses are usually offered in the autumn semester, and even-numbered courses are offered in the spring semester.

SCHOOL OF FORESTRY COURSES

IN THE SUMMER SESSION

C.E. S110. PLANE SURVEYING.—A special section of C.E. 61 intended for students in forestry and others of advanced standing. *Four weeks, eight hours a day, beginning June 12, 1957. 4 s.h. (w)* MR. ARGES

S149. FOREST-TREE IDENTIFICATION.—Field studies leading to the identification of trees and principal shrubs indigenous to the Piedmont and coastal plain forests of the Southeastern United States. *One week, eight hours a day, beginning July 10, 1957. 1 s.h. (w)* MR. HARRAR

S150. FOREST SURVEYING AND AERIAL PHOTO INTERPRETATION.—Application of plane surveying to forest problems; practice in making boundary, topographic and cover type surveys; details of land ownership and transfer, title search, and deed descriptions. The last two weeks will be spent in the study of the principles of aerial photogrammetry and photo interpretation, and may be taken separately for 2 hours of credit. Prerequisites: Civil Engineering S110, Forestry S149, or equivalents. *Four weeks, eight hours a day, beginning July 17, 1957. 4 s.h. (w)* MR. CHAIKEN

S151. FOREST MENSURATION.—Field studies in methods of measuring content and growth of trees and forest stands; practice in timber estimating, log scaling, use of mensurational instruments, and collection of basic data. *Four weeks, eight hours a day, beginning August 14, 1957. 4 s.h. (w)* MR. SCHUMACHER

S230. INSECT ENEMIES AND DISEASES OF SOUTHERN FORESTS.—Identification and control of injurious forest insects and diseases occurring in the South. Time to be arranged. Minimum enrollment 10. 1 s.h. or may be taken without credit. MESSRS. ANDERSON AND JOHNSON

FOR SENIORS AND GRADUATES

211-212. HARVESTING AND PROCESSING FOREST PRODUCTS AND FIELD TRIP.—Methods of harvesting and processing forest products with emphasis on methods and costs in managed North American forests. A two-week field trip (F. 212), during which typical forest harvesting operations and processing plants are studied, is required of students taking Forestry 211. The field trip (F. 212) may be taken by other students having had work equivalent to Forestry 211. F. 211—3 s.h.; F. 212—1 s.h. (w) MR. WACKERMAN

213. SEASONING AND PRESERVATION OF WOOD.—Principles of seasoning timber, lumber, and other forest products by air drying and kiln drying, types of kilns and their operation; principles, methods, and materials used in treating wood to increase its durability. 3 s.h. (w) MR. WACKERMAN

214. MARKETING FOREST PRODUCTS.—Methods of selling and distributing timber, lumber, and other forest products in domestic and foreign trade; transportation methods; promotional activities of trade associations; competition between producing regions for markets and problems arising from the development of wood substitutes. Prerequisites: Forestry 211-212 or equivalent. 3 s.h. (w)

MR. WACKERMAN

216. LUMBER MANUFACTURING.—Methods of processing logs for sawn products with emphasis on the principles involved in obtaining maximum volume and quality yield for large and small mills and concentration yards; trends in production and consumption of lumber by regions and the development of new lumber products. 3 s.h. (w) MR. WACKERMAN

224. FOREST PATHOLOGY.—Infectious and non-infectious diseases of forest trees, and related deterioration of forest products. Field and laboratory study of symptoms, etiology, and control. Prerequisites: Botany 1 and 2, or equivalent. 3 s.h. (w) MR. JOHNSON

231. FOREST ENTOMOLOGY.—Principles of protecting forests from insect attack; character of insect damage to forest trees and their products; identification and biology of important species; survey methods and control. 3 s.h. (w) MR. ANDERSON

232. FOREST-PRODUCTS ENTOMOLOGY.—Recognition of insect damage to wood products; etiology, biology and control of important species. 3 s.h. (w) MR. ANDERSON

236. FOREST-GAME MANAGEMENT.—Principles of management for the sustained production of desirable game and fur animals on forest lands; characteristics and biology of important species. 3 s.h. (w) MR. ANDERSON

237. FOREST-RANGE MANAGEMENT.—Principles of management of livestock grazing on forest ranges on the basis of sustained multiple use. 3 s.h. (w) MR. ANDERSON

251. SAMPLING METHODS IN FORESTRY.—Statistical background for solution of sampling problems with special reference to sample inventory of a forest property. Offered both semesters. Prerequisite: Forestry SI51. 3 s.h. (w) MR. SCHUMACHER

252. FOREST MENSURATION.—Empirical equations and curve fitting appropriate for construction of timber yield tables, tree volume and taper tables; significance tests and graphical solution of equations. Assignments require operation of calculating machines. Prerequisite: Forestry 251. 3 s.h. (w) MR. SCHUMACHER

253. DENDROLOGY.—Nomenclature, classification, and identification of woody plants with special reference to species indigenous to southeastern United States and other important forest regions of temperate North America. Laboratory and field work. Prerequisite: one year of biology. 3 s.h. (w) MR. HARRAR

255. BONDING OF WOOD.—Preparation of veneers and lumber for bonding; types and characteristics of modern adhesives used in the manufacture of plywood and laminates; cold and hot pressing procedures; use of electronic heating; bag molding techniques; manufacture and properties of transmuted wood; inspection and testing procedures. Prerequisite: Forestry 259 and 260 or equivalent. 3 s.h. (w) MR. HARRAR

257. DESIGN OF FORESTRY EXPERIMENTS AND ANALYSIS OF DATA.—Role of experimental design in field and laboratory, and statistical analysis of data as aspects of scientific methods in forestry research. 5 s.h. (w) MR. SCHUMACHER

259. PROPERTIES OF WOOD.—The chemical nature of wood substance and its industrial chemical derivatives. Wood-moisture relationships; pertinent non-mechanical physical properties; mechanical properties and factors affecting the strength of wood; standard timber testing procedures. Uses of woods as determined by their properties. Prerequisites: one year of college chemistry; one course in college physics. 3 s.h. (w) MR. HARRAR

260. WOOD ANATOMY.—Study of the physical features and the gross and minute structural characteristics of wood leading to the identification of the commercial woods of the United States, and the important tropical woods used in American wood-working industries. Elementary microtechnique. Prerequisite: one year of biology. 3 s.h. (w) MR. HARRAR

261. **FOREST SOILS.**—Origin, development, and classification of soils with special emphasis on those developed in humid climates; morphological, physical, and chemical properties of soils in relation to growth of trees; effect of forests on soils. Prerequisites: Chemistry 1 and 2, and Physics 1, or equivalent; physical geology, mineralogy, petrology, and analytical chemistry are also desirable. 3 s.h. (w)

MR. RALSTON

264. **SILVICS.**—Ecological foundations of silviculture with special reference to forest site factors; influence of forests on their environment; growth and development of trees and stands; origin, development, and classification of forest communities; methods of studying forest environments. Desirable prerequisites: plant physiology, plant ecology, and Forestry 261, or equivalents. 3 s.h. (w)

MR. RALSTON

265. **THEORY AND PRACTICE OF SILVICULTURE.**—Principles governing natural regeneration and treatment of forest stands and their application; reproduction methods, intermediate cuttings, and cultural operations. Field practice includes marking for various kinds of cuttings, cultural treatments, and study of managed stands in the Duke Forest. Prerequisite: Forestry 264 or equivalent. 3 s.h. (w)

MR. KORSTIAN

266. **SOILS AND SILVICULTURE SPRING TRIP.**—Approximately one week at spring camp studying soils and silviculture in the coastal plain. Prerequisites: Forestry 261, 265 or equivalents. 1 s.h.

MR. RALSTON

267. **APPLIED SILVICULTURE.**—Application and comparison of silvicultural practices to principal commercial forest species, types and regions of temperate North America, with particular emphasis on the South. Field work will include preparation of silvicultural plans. Prerequisite: Forestry 265 or equivalent. 1 s.h. (w)

MR. KORSTIAN

268. **FOREST SEEDING AND PLANTING.**—Place of artificial regeneration in practice of forestry; reforestation surveys and plans; collection, extraction, cleaning, testing and storage of forest tree seeds; direct seeding; nursery practice; forest planting. 2 s.h. (w)

MR. KORSTIAN

274. **FOREST PROTECTION.**—Principles of forest protection; causes, character and effects of forest fires; principles of forest fire prevention, suppression and suppression; fire control costs and fire plans; protection against domestic animals, wildlife, and atmospheric agencies. 2 s.h. (w)

MR. CHAIKEN

276. **FORESTRY POLICY.**—Objective study and analysis of the development of public land and forestry policies in the United States, present policies of public and private forestry organizations, and current policy issues in the light of economic and other criteria. Prerequisites: Forestry 279, 281. 2 s.h. (w)

277. **ECONOMICS OF FORESTRY.**—Principles of economics used in the analysis of factors affecting the supply of forest products, pricing of stumpage and primary forest products, factors affecting the demand for forest products, economic characteristics and problems of the major forest products industries; analysis of such specific private forestry problems as marketing, forest ownership pattern, taxation, credit, risk, and economic fluctuations. Prerequisite: at least one course in the principles of economics. 3 s.h. (w)

279. **ECONOMIC ANALYSIS IN FOREST MANAGEMENT.**—Principles of economics of particular value in private forest management; development of specific applications for evaluating production alternatives in forestry. Prerequisite: Forestry 277 or consent of the instructor. 3 s.h. (w)

281. **FOREST MANAGEMENT.**—Principles of organizing forest properties for systematic management; use of data obtained in surveys and inventories; principles of forest regulation, including a study of normal and actual forests, rotations, cutting cycles, and methods of regulating the cut in even-aged and all-aged forests for sustained yield; introduction to the preparation of preliminary forest management plans. Prerequisites: Forestry S150, S151, or equivalents. 3 s.h. (w)

MR. CHAIKEN

211A. TO 281A. SPECIAL STUDIES IN FORESTRY.—Work on the same level as the foregoing Senior-Graduate courses to meet the needs of individual students. Credits and hours to be arranged.

THE STAFF

FOR GRADUATES

301, 302. ADVANCED STUDIES IN FORESTRY.—Credits to be arranged. To meet individual needs of graduate students in the following branches of forestry:

A. SILVICS.—Prerequisites: Forestry 253, 261, and 264 or equivalents.

MR. KORSTIAN AND MR. RALSTON

B. FOREST SOILS.—Prerequisite: Forestry 261 or equivalent.

MR. RALSTON

C. SILVICULTURE.—Prerequisites: Forestry 265, 266 and 267 or equivalents.

MR. KORSTIAN

D. FOREST MANAGEMENT.—Prerequisite: Forestry 281 or equivalent.

MR. CHAIKEN

E. FOREST ECONOMICS.—Prerequisite: Forestry 277 or equivalent.

F. PROPERTIES OF WOOD.—Prerequisites: Forestry 259 and 260, or equivalents.

MR. HARRAR

G. FOREST MENSURATION.—Prerequisite: Forestry 252, or equivalent.

MR. SCHUMACHER

H. FOREST ENTOMOLOGY.—Prerequisites: Forestry 231, 232 or equivalents.

MR. ANDERSON

I. FOREST UTILIZATION.—Prerequisite: Forestry 211-212 or equivalent.

MR. WACKERMAN

J. DENDROLOGY.—Prerequisite: Forestry 253 or equivalent.

MR. HARRAR

K. FOREST TREE PHYSIOLOGY.—Prerequisites: Plant physiology, plant ecology, and silvics.

MR. KRAMER

L. FOREST PATHOLOGY.—Prerequisites: Plant physiology and Forestry 224 or equivalent.

MR. JOHNSON

311. ADVANCED FOREST UTILIZATION.—Analysis of the principles of determining the cost of and return from harvesting and manufacturing timber for various products and other uses of forests; study of factors governing the relation of tree size to net stumpage values; and the application of these principles and methods in the solution of actual case problems. Prerequisites: Forestry 211-212 or equivalent. 3 s.h. (w)

MR. WACKERMAN

320. SEMINAR IN SILVICULTURE.—Arranged primarily to give graduates of other schools of forestry special training in the silviculture of the forests of the South. All men taking this course should also register for Forestry 266. Prerequisite: At least one course in silviculture. 3 s.h. (w)

MR. KORSTIAN

322. SOIL CLASSIFICATION AND MAPPING.—Classification of soils as natural bodies. Mapping of soils, land use classes and forest site classes. Ordinarily one week of field study will be made of soils in either the coastal plain or mountains. Prerequisites: Forestry 261. 2 s.h. (w)

MR. RALSTON

326. ADVANCED FOREST SOILS.—Interrelations of the physical, chemical, and biological characteristics of forest and range soils. Prerequisites: analytical chemistry and Forestry 261. 3 s.h. (w)

MR. RALSTON

331. TOXICOLOGY AND USE OF INSECTICIDES.—Physical, chemical and biological properties of materials used to destroy insects. Formulation, toxicology and use are emphasized. 3 s.h. (w)

MR. ANDERSON

332. ECOLOGY OF FOREST INSECTS.—Study of the environmental factors as they influence insect population development. Both the physical and the biotic aspects are considered on the basis of field and laboratory experimental methods. Prerequisites: Forestry 231 or Forestry 232 or equivalent. 3 s.h. (w)

MR. ANDERSON

342. **ADVANCED FOREST MANAGEMENT.**—Examination and analysis of techniques employed in the management of industrial and public forests, particularly in the South; discussion of problems of large scale intensive forest management. One week is spent in field study in the South Atlantic Coastal Plain. Prerequisites: Forestry 267, 279, and 281 or equivalents. 2 s.h. (w) MR. CHAIKEN

354. **WOOD FINISHING.**—Preparation of wood and wood surfaces for application of finish coatings; the physical and chemical properties of finishing materials; equipment and methods of application; overlays, decals, and printing; laboratory control and qualitative evaluation of finished surface; finishing characteristics of various species of wood. Prerequisites: Forestry 259, 260 or equivalent; 1 year of organic chemistry also desirable. 3 s.h. (w) MR. HARRAR

356. **SEMINAR IN FOREST ECONOMICS.**—Examination and discussion of the application of economic concepts in forestry, the potential contribution of economic analysis to private and public forest management; current research in forest economics. Prerequisites: Forestry 277 and 279 or consent of the instructor; advanced courses in economics and economic theory are desirable. 2 s.h. (w)

357, 358. **RESEARCH IN FORESTRY.**—Credits to be arranged. Students who have had adequate training may do research under direction of members of the Faculty in the branches of forestry indicated under courses 301, 302 with the same prerequisites as thereunder noted. Each branch to bear the same letter designation as under Courses 301 and 302.

OTHER RELATED COURSES

In addition to the previously listed courses offered in the School of Forestry, the following courses may also be taken for credit.

BOTANY DEPARTMENT

202. **GENETICS.**—The principles of heredity, their cytological basis, and their bearing on other fields of biology. Laboratory work involves experimental breeding of the fruit fly and interpretation of data from the breeding of plants. Offered in alternate years. Prerequisites: one year of botany, zoology, or equivalent, and college algebra. 4 s.h. (w) MR. PERRY

221. **INTRODUCTORY MYCOLOGY.**—Field and laboratory study of the vegetative and reproductive structures of the fungi and slime molds. Methods of collection, isolation, propagation, and identification of the major orders as represented in the local flora. Prerequisite: A year of biological science. 4 s.h. (w) MR. JOHNSON

252. **PLANT METABOLISM.**—The physicochemical processes and conditions underlying the physiological processes of plants. Prerequisite: Botany 151 or equivalent; organic chemistry recommended. Not offered 1957-1958. 3 s.h. MR. NAYLOR

254. **PLANT WATER RELATIONS.**—A study of factors affecting the availability of water, its absorption and use in plants, and the effects of water deficits on plant processes. Assigned readings, reports, and lectures. Prerequisite: Botany 151 or equivalent. 3 s.h. (w) MR. KRAMER

256. **COMMUNITY ANALYSIS AND CLASSIFICATION.**—The development of concepts and methods in synecology and their present application to the study of plant communities. Prerequisite: Botany 156 or equivalent. 3 s.h. (E) MR. OOSTING

257. **PRINCIPLES OF PLANT DISTRIBUTION.**—Interpretation of the floristic and ecological plant geography of the world's vegetation. Prerequisite: Botany 156 or equivalent. 3 s.h. (E) MR. BILLINGS

258. **PHYSIOLOGY OF GROWTH AND DEVELOPMENT.**—Consideration of the internal factors and processes of new protoplasm and its differentiation at the cellular, tissue, and organ level in plants. Prerequisites: Botany 151 or equivalent; organic chemistry recommended. 3 s.h. (E) MR. NAYLOR

259. ENVIRONMENTAL MEASUREMENTS.—Methods of obtaining and evaluating climatological data for ecological purposes with special attention to instrumentation and microclimate. Prerequisite: Botany 156 or equivalent. 3 s.h. (E)

MR. BILLINGS

CHEMISTRY DEPARTMENT

233. INSTRUMENTAL ANALYSIS.—Experiments in the use of physical measuring instruments in chemical analysis with special attention to optical instruments. One lecture and three laboratory hours per week. Prerequisites: Chemistry 70 and one year of physics. 2 s.h. (w)

MESSRS. STROLOR, SAYLOR AND VOSBURGH

ECONOMICS DEPARTMENT

313-314. SEMINAR IN ECONOMIC THEORY.—The course consists of directed research in economic theory. The primary purpose is the correction of authoritative eclecticism and its replacement by individually integrated theory. 6 s.h. (w)

MR. HOOVER

317. SEMINAR IN DEMOGRAPHIC, POPULATION, AND RESOURCE PROBLEMS.—3 s.h. (w)

MR. SPENGLER

319. SEMINAR IN THE THEORY AND THE PROBLEMS OF ECONOMIC GROWTH AND CHANGE.—3 s.h. (w)

MR. SPENGLER

386. SEMINAR IN LATIN-AMERICAN ECONOMIC PROBLEMS.—3 s.h. (w)

MR. SMITH

COLLEGE OF ENGINEERING

158. INDUSTRIAL ENGINEERING.—A study of the industrial growth and present tendencies of productive industries as concerns the engineer. Specific topics treated are: plant location, organization, production and cost controls, and wage payment. 3 s.h. (w)

MR. LEWIS

PHILOSOPHY DEPARTMENT

241. LOGIC.—Fundamental Problems of Logic. 3 s.h. (E)

MR. CLARK

ZOOLOGY DEPARTMENT

222. ENTOMOLOGY.—Anatomy, physiology, embryology, and classification of insects. Prerequisite: one year of zoology. 4 s.h. (w)

MR. GRAY

238. SYSTEMATIC ZOOLOGY.—The fundamental theory and practice involved in the collection, identification and classification of animals. Prerequisite: Zoology 1 and 2. 4 s.h. (w)

MR. BAILEY

271. CELLULAR PHYSIOLOGY.—The physiological processes of living matter approached through studies of cells. Prerequisites: two years of biology and at least one year of chemistry. 4 s.h. (w)

MR. WILBUR

303. ECOLOGY.—Relation of animals to environment. Lectures, readings, reports, conferences; laboratory and field work. 4 s.h. (w)

MR. GRAY

Enrollment 1956-1957



- ‡Applequist, Martin Benjamin (B.S., Iowa State College; M.F., Duke University), Baton Rouge, La.
- *Barrett, James Passmore (B.S., North Carolina State College), Atlanta, Ga.
- *Bethune, James Edward (B.B.A., University of Georgia), Homerville, Ga.
- ‡Bilan, Mykyta Victor (University of Lemberg; Diploma in Forestry, University of Munich; M.F., Duke University), Durham, N. C.
- *Calkins, Charles Sherman (B.S., Beloit College), Evanston, Ill.
- ‡Carter, Mason Carlton (B.S.; M.F., Virginia Polytechnic Institute), Blacksburg, Va.
- *Clutter, Jerome Lee (B.S., Michigan State University), Pittsburgh, Pa.
- ‡Engelhardt, Norman Thain (B.S.F., University of British Columbia; M.S., Oregon State College), Victoria, B C., Canada
- †Flora, Robert Lee (Bridgewater College), Rocky Mount, Va.
- ‡Gilmore, Alvan Ray (B.S.F., University of Florida; M.F., Duke University), Auburn, Ala.
- *Gleaves, William Walton (B.S.F., University of Idaho), Cocoa, Fla.
- *Hug, Richard Ernest (B.S., Duke University), Penns Grove, N. J.
- †Hunt, Michael O'Leary (University of Kentucky), Louisville, Ky.
- †Ketcham, David Elliott (Duke University), Hinton, W. Va.
- †Kipp, Henry William (B.A., Trinity College), Pittsburgh, Pa.
- *Kozlik, Charles James (A.B., Doane College), Crete, Nebr.
- ‡Larsen, Harry Stites (B.S., Rutgers University; M.S., Michigan State University), Pittsburgh, Pa.
- *Lewis, Gordon Depew (B.S., Virginia Polytechnic Institute), Profit, Va.
- ‡Lund, Anders Edward, Jr. (B.S.F., Colorado Agricultural and Mechanical College; M.F., Duke University), Prairie View, Ill.
- *McGee, Charles Eugene (B.S., Howard College), Birmingham, Ala.
- *Miller, William Lewis (B.S.F., West Virginia University), St. Albans, W. Va.
- ‡Minor, Charles Oscar (B.S., Iowa State College; M.F., Duke University), Durham, N. C.
- †Phipps, Howard M. (B.A., Colgate University), Hempstead, N. Y.
- *Post, Boyd Wallace (B.S., Ohio University), Corning, Ohio
- *Ripley, William III (B.S., University of Massachusetts), Cohasset, Mass.
- †Rodenbach, Richard Charles (Moravian College), Bethlehem, Pa.
- †Row, Horace Clark (B.S., Yale University), Lead, S. D.
- §Saini, Tejghan Singh (A.B., University of the Punjab; M.A., Formau Christian College), Rupar, Punjab, India
- †Utz, Keith Allan (Davis and Elkins College), Elkins, W. Va.
- †Vaidya, Madhu Sudan Lal (F. Sc. (Medical), Bhargwa Municipal College; B.Sc. Punjab University), Mandi, Himachal Pradesh, India
- †Vick, Charles Booker (A.B., Duke University), Seaboard, N. C.
- †Wilt, Daniel Lloyd (Moravian College), Bethlehem, Pa.
- †Woodward, Charles Flynn (B.S., Danbury Teachers College; M.A., Fairfield University), Bethlehem, Conn.
- †Wyrrick, Joseph Lowell (Duke University), Alliance, Ohio
- *Yim, Hyung Bin (Lincoln Memorial University), Seoul, Korea

Students in Summer Session Only, 1956

- ‡Furnival, George Mason (B.S.F., University of Georgia; M.F., Duke University), New Haven, Conn.
- Hoffman, Benjamin F., Jr. (B.A., University of Virginia), Hamden, Conn.
- Miller, Harold Nelson (B.A., Presbyterian College), Holly Hill, S. C.

* Registered for Master of Forestry Degree, 1957.

† Registered for Master of Forestry Degree, 1958.

‡ Registered for Doctor of Forestry Degree.

§ Withdrew.

Special Students

Kenashi, Kenkichi (M.A.; Doctor of Agriculture, Kyushu Imperial University), Fukuoka, Japan

Stojanovic, Ostoja (Forestry Engineer, University of Sarajevo), Sarajevo, Yugoslavia

Students of Forestry in the Graduate School of Arts and Sciences

Allen, Robert Max (B.S.; M.S., Iowa State College), Saucier, Miss.

McGregor, William Henry Davis (B.S., Clemson College; B.S.F.; M.F., University of Michigan), Lake City, Fla.

Institutions Represented

Beloit College	1	Oregon State College	1
Bhargwa Municipal College	1	Presbyterian College	1
Bridgewater College	1	Rutgers University	1
Clemson College	1	Trinity College	1
Colgate University	1	University of British Columbia	1
Colorado Agricultural and Mechanical College	1	University of Florida	1
Danbury Teachers College	1	University of Georgia	2
Davis and Elkins College	1	University of Idaho	1
Doane College	1	University of Kentucky	1
Duke University	10	University of Lemberg	1
Fairfield University	1	University of Massachusetts	1
Forman Christian College	1	University of Michigan	1
Howard College	1	University of Munich	1
Iowa State College	3	University of Punjab	2
Kyushu Imperial University	1	University of Sarajevo	1
Lincoln Memorial University	1	University of Virginia	1
Michigan State University	2	Virginia Polytechnic Institute	2
Moravian College	2	West Virginia University	1
North Carolina State College	1	Yale University	1
Ohio University	1	Total Institutions	39

Geographical Distribution

UNITED STATES

Alabama	2	New Jersey	1
Connecticut	3	New York	1
Florida	2	North Carolina	3
Georgia	2	Ohio	2
Illinois	2	Pennsylvania	5
Kentucky	1	South Carolina	2
Louisiana	1	South Dakota	1
Massachusetts	1	Virginia	3
Mississippi	1	West Virginia	3
Nebraska	1	Total States	19

FOREIGN COUNTRIES

Canada	1	Korea	1
India	2	Yugoslavia	1
Japan	1	Total	5

General Summary

Students in the School of Forestry	35
Students in Summer Session Only	3
Special Students	2
Students of Forestry in the Graduate School of Arts and Sciences	2
Total Enrollment	42
Total number of institutions represented	39
Total number of states represented	19
Total number of foreign countries represented	5

BULLETIN OF DUKE UNIVERSITY



The Summer Session 1957

First Term: June 11 to July 17

Second Term: July 19 to August 24

VOLUME 29

February, 1957

NUMBER 4

Annual Bulletins

For GENERAL BULLETIN of Duke University, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF UNDERGRADUATE INSTRUCTION, apply to *The Registrar*, Duke University, Durham, N. C.

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For BULLETIN OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES, apply to *The Dean of the Graduate School*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF FORESTRY, apply to *The Dean of the School of Forestry*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF LAW, apply to *The Dean of the School of Law*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF MEDICINE, apply to *The Dean of the School of Medicine*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF NURSING, apply to *The Dean of the School of Nursing*, Duke University, Durham, N. C.

For BULLETIN OF THE DIVINITY SCHOOL, apply to *The Dean of the Divinity School*, Duke University, Durham, N. C.

For BULLETIN OF THE SUMMER SESSION, apply to *The Director of the Summer Session*, Duke University, Durham, N. C.

Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

BULLETIN
OF
DUKE UNIVERSITY



The Summer Session 1957

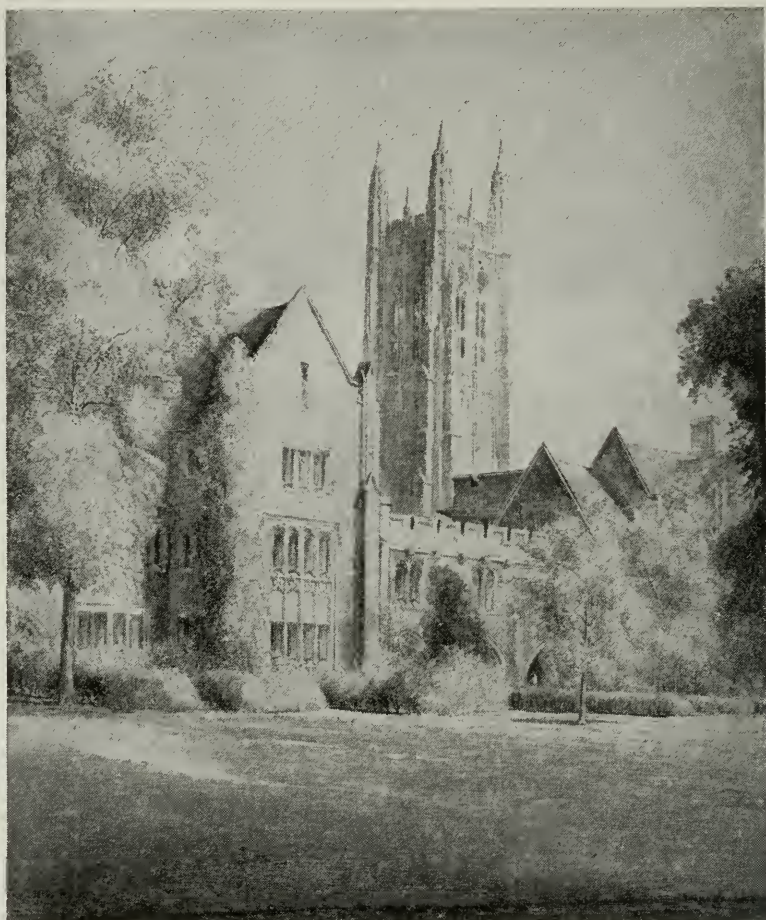
ANNOUNCEMENTS

First Term: June 11 to July 17

Second Term: July 19 to August 24

DURHAM, NORTH CAROLINA

1957



The Chapel Tower

(from an etching by Louis Orr)

The Chapel Tower dominates the scene of West, or the University, Campus, and it symbolizes the spiritual heritage of the University. The predominantly Gothic architecture, traditionally restless and aspiring, contributes to the intellectually stimulating atmosphere of the University and provides an appropriate setting for educational endeavors.

Calendar of the Summer Session 1957



JUNE							JULY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1		1	2	3	4	5	6					1	2	3
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
30																				

(Science classes do not meet on Saturdays. All other classes meet on Saturdays unless otherwise indicated in the Calendar.)

June 4-7, Tuesday-Friday

Christian Convocation of 1957.

June 10, Monday, 9:00 a.m.

Dormitory rooms ready for occupancy.

June 11, Tuesday

Registration for First Term.

June 11-August 6

Short-Term Courses in Education (see pages 44-45).

June 12, Wednesday

Instruction begins in all 3 s.h. courses of the First Term.

June 13-14, Thursday-Friday

Conference on Elementary Education-Social Studies.

June 18-19, Tuesday-Wednesday

Conference on School Law

June 18, Tuesday

Instruction begins in all 4 s.h. courses of the First Term in Chemistry, Geology, Physics and Zoology.

June 22, Saturday

No classes meet.

June 26, Wednesday

Final date for filing with the Dean of the Graduate School statement of intention to complete Master's degree requirements during the First Term, and for filing title of Master's thesis.

July 1-18, Monday-Thursday

A Clinic in Preaching.

July 4-6, Thursday-Saturday

Conference of the North Carolina English Teachers Association.

July 4, Thursday

All classes meet.

July 5, Friday (4:00 p.m. in Room 114, Physics Building)

Graduate reading examinations in French and Spanish. Applicants for these examinations must register in the Graduate School Office not later than June 27.

July 6, Saturday

No classes meet.

- July 16-17, Tuesday-Wednesday
Final Examinations for the First Term.
- July 16-August 9, Tuesday-Friday
School for Approved Supply Pastors.
- July 19, Friday
Registration for the Second Term.
- July 20, Saturday
Instruction begins in all Second Term courses, except *science* courses.
- July 22, Monday
Instruction begins in all *science* courses in the Second Term.
- July 31, Wednesday
Final date for filing with the Dean of the Graduate School statement of intention to complete Master's degree requirements during the Second Term, and for filing title of Master's thesis.
- August 3, Saturday
No classes meet.
- August 5-9, Monday-Friday
Conference of the Youth Council of the Methodist Youth Fellowship.
- August 12-16, Monday-Friday
Conference of the School of Missions Committee of the Woman's Society of Christian Service of the North Carolina Conference of the Methodist Church.
- August 16, Friday
Final examinations in all 4 s.h. courses of the Second Term in Chemistry, Geology, Physics, and Zoology.
- August 17, Saturday
No classes meet.
- August 17-18, Saturday-Sunday
Laymen's Assembly of the North Carolina Conference of the Methodist Church.
- August 19-23, Monday-Friday
Water Works School of the North Carolina Water Works Association.
- August 23-24, Friday-Saturday
Final examinations in all 3 s.h. courses in the Second Term.

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Administrative Officers of the Summer Session



ARTHUR HOLLIS EDENS, PH.D., LL.D.

President of Duke University

PAUL MAGNUS GROSS, PH.D.

Vice-President in the Division of Education and Dean of the University

CHARLES EDWARD JORDAN, A.B., LL.D.

Vice-President in the Division of Public Relations

HERBERT JAMES HERRING, A.M., LL.D.

Vice-President in the Division of Student Life

ALFRED SMITH BROWER, A.B.

Business Manager and Treasurer

GERHARD CHESTER HENRICKSEN, C.P.A.

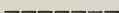
Comptroller and Assistant Treasurer

PAUL HIBBERT CLYDE, PH.D.

Director of the Summer Session

RICHARD LOVEJOY TUTHILL, ED.D.

University Registrar



ROBERTA FLORENCE BRINKLEY, PH.D., LL.D.

Dean of the Woman's College

JAMES CANNON, TH.M., D.D., LL.D.

Dean of the Divinity School

MARCUS EDWIN HOBBS, PH.D.

Dean of the Graduate School of Arts and Sciences

CLARENCE FERDINAND KORSTIAN, PH.D.

Dean of the School of Forestry

ALAN KREBS MANCHESTER, PH.D.

*Dean of Trinity College and Assistant to the Vice-President
in the Division of Education*

WALTER JAMES SEELEY, M.S.

Dean of the College of Engineering



GAZLYN GREEN BOOKHOUT, PH.D.

Director of the Duke Marine Laboratory

ROBERT B. COX, A.M.

Dean of Undergraduate Men

EARL THOMAS HANSON, PH.D.

Director of Admissions, Graduate School of Arts and Sciences

DUKE UNIVERSITY

ELLEN HARRIS HUCKABEE, A.M.

Dean of Undergraduate Instruction, The Woman's College

MARIANNA DUNCAN JENKINS, PH.D.

Associate Dean of Undergraduate Instruction, The Woman's College

CHARLES BUCHANAN JOHNSON, ED.D.

Assistant Dean of Trinity College

BARNEY L. JONES, B.D.

Assistant Dean of Trinity College

LEWIS J. MCNURLIN, PH.D.

Assistant Dean of Trinity College

MRS. ELIZABETH ANDERSON PERSONS, A.M.

Director of Admissions, The Woman's College

OLAN LEE PETTY, PH.D.

Assistant Director, The Summer Session

HOWARD AUSTIN STROBEL, PH.D.

Assistant Dean of Trinity College

EVERETT BROADUS WEATHERSPOON, A.B.

*Director of Admissions, Trinity College and the
College of Engineering*

MARY GRACE WILSON, A.M.

Dean of Undergraduate Women

MARGARET FLORY, A.B.

Social Director, Term I

CATHERINE S. DEATON, A.B.

House Counselor Women's Residence, Term I

ELLEN LYLES, A.M.

Social Director, Term II

PATRICIA SANDERFORD, A.M.

House Counselor Women's Residence, Term II

W. S. PERSONS, A.B.

Recreation Supervisor for the Summer Session

The Summer Session Faculty



- CARL L. ANDERSON, PH.D.
Instructor in English
- ROGER FABIAN ANDERSON, PH.D.
Associate Professor of Forest Entomology
- KIRO PETE ARGES, M.S. IN C.E.
Assistant Professor of Civil Engineering
- PIERRE AUBERY, DOCTEUR DE L'UNIVERSITÉ
Instructor in Romance Languages
- DAVID B. AUSTIN, PH.D.
*Visiting Professor of Education
Columbia University*
- THOMAS MALCOLM AYCOCK, M.A.
Professor of Physical Education
- JOSEPH RANDLE BAILEY, PH.D.
Associate Professor of Zoology
- MARTIN LEE BLACK, JR., M.B.A., C.P.A.
Professor of Accounting
- JOHN B. BLANCHARD, A.M.
Instructor in Romance Languages
- EDWARD CLAUDE BOLMEIER, PH.D.
Professor of Education
- CAZLYN GREEN BOOKHOUT, PH.D.
Professor of Zoology
- LYOYD J. BORSTELMANN, PH.D.
Assistant Professor of Psychology
- FRANCIS EZRA BOWMAN, PH.D.
Associate Professor of English
- RALPH J. D. BRAIBANTI, PH.D.
Associate Professor of Political Science
- LUTHER BRICE, PH.D.
*Visiting Assistant Professor of Chemistry,
Virginia Polytechnic Institute*
- FRANCES CAMPBELL BROWN, PH.D.
Professor of Chemistry
- ROGER CONANT BUCK, B.A., B.PHIL.
(OXON.)
Assistant Professor of Philosophy
- LOUIS J. BUDD, PH.D.
Assistant Professor of English
- LEONARD CARLITZ, PH.D.
Professor of Mathematics
- JOHN WILLIAM CARLTON, B.D., PH.D.
Assistant Professor of Preaching
- DAVID WILLIAMS CARTENTER, PH.D.
Professor of Physics
- ALLAN MURRAY CARTIER, PH.D.
*Associate Professor of Economics and
Research Associate*
- WILLIAM H. CARTWRIGHT, PH.D.
Professor of Education
- JUAN RODRÍGUEZ CASTELLANO, DOCTOR EN
FILOSOFÍA Y LETRAS
Professor of Romance Languages
- LEON EDWARD CHAIKEN, B.S., M.F.
*Associate Professor of Forest Management and Assistant Director of the
Forest*
- BENJAMIN GUY CHILDS, M.A.
Professor of Education
- PAUL WHITLOCK COBB, B.S.
*Instructor in Physical Education,
Trinity College*
- JOEL G. COLTON, PH.D.
Assistant Professor of History
- ROBERT MERLE COLVER, ED.D.
Assistant Professor of Education
- ALEXANDER DECONDE, PH.D.
Assistant Professor of History
- RUSSELL LESLIE DICKS, B.D., D.D., D.LITT.
Professor of Pastoral Care
- NEAL DOW, PH.D.
*Associate Professor of Romance
Languages*
- ROBERT F. DURDEN, PH.D.
Assistant Professor of History
- WILLIAM WHITFIELD ELLIOTT, PH.D.
Professor of Mathematics
- ARTHUR BOWLES FERGUSON, PH.D.
Associate Professor of History
- JOHN H. FISHER, PH.D.
Associate Professor of English
- WESTON FLINT, A.M.
Instructor in Romance Languages
- ANDREW DURWOOD FOSTER, B.D., TH.D.
*Assistant Professor of the History and
Philosophy of Religion*

- WILLIAM J. FURBISH, M.S.
Instructor in Geology
- W. SCOTT GEHMAN, JR., PH.D.
Assistant Professor of Education
- CLARENCE GOHDES, PH.D.
Professor of English
- HALINA Z. GOLDSMITH, R.N., B.S., M.L.
Assistant Professor of Nursing
- RICHARD BABSON GRANT, PH.D.
Assistant Professor of Romance Languages
- IRVING EMERY GRAY, PH.D.
Professor of Zoology
- JOHN HAMILTON HALLOWELL, PH.D.
Professor of Political Science
- PHILLIP J. HAMRICK, PH.D.
Visiting Assistant Professor of Chemistry, Wake Forest College
- ARREN MAYNOR HARDEE, A.M.
Instructor in Romance Languages
- ELLWOOD SCOTT HARRAR, PH.D.
Professor of Wood Technology
- ALLAN S. HURLBURT, PH.D.
Professor of Education
- THELMA MARGUERITE INGLES, R.N., M.A.
Associate Professor of Nursing Education and Director, Division of Nursing Education
- ANNE MADELINE JACOBANSKY, R.N., B.S.N.E., M.Ed.
Professor of Nursing
- HOWARD EIKENBERRY JENSEN, PH.D.
Professor of Sociology
- FREDERICK CHARLES JOERG, M.B.A.
Professor of Economics
- TERRY WALTER JOHNSON, JR., PH.D.
Assistant Professor of Botany
- GREGORY A. KIMBLE, PH.D.
Associate Professor of Psychology
- BARNET KOTTLER, PH.D.
Instructor in English
- CREIGHTON LACY, B.D., PH.D.
Associate Professor of Missions and Social Ethics
- CHARLES EARL LANDON, PH.D.
Professor of Economics
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Assistant Professor of Political Science
- JONATHAN COLLINS MCLENDON, PH.D.
Associate Professor of Education
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Instructor in Sociology
- CLYDE LEONARD MANSCHRECK, B.D., PH.D.
Assistant Professor of Undergraduate Religion
- GUSTAVUS H. MILLER, PH.D.
Instructor in Romance Languages
- R. J. MONROE, PH.D.
Visiting Professor of Experimental Statistics, North Carolina State College
- ROBERT JOHN MONTFORT, B.A.
Assistant Professor of Physical Education
- HIRAM EARL MYERS, S.T.M., D.D.
Professor of Biblical Literature
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Instructor in Education
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Instructor in Undergraduate Religion
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Associate Professor of Education
- JAMES HENRY PHILLIPS, PH.D.
Associate Professor of Undergraduate Religion
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Assistant Professor of Botany
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Associate Professor of Undergraduate Religion
- McMURRY SMITH RICHEY, B.D., PH.D.
Assistant Professor of the Philosophy of Christian Education
- JESSE LEE ROSE, PH.D.
Associate Professor of Latin and Greek
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Associate Professor of Education
- CHARLES RICHARD SANDERS, PH.D.
Professor of English
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Professor of Forestry
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Associate Professor of Political Science

HILRIE SHELTON SMITH, PH.D., D.D.,
LITT.D.
*James B. Duke Professor of American
Religious Thought*

ROBERT SIDNEY SMITH, PH.D.
Professor of Economics

CHARLES D. SPIELBERGER, PH.D.
*Assistant Professor of Psychology and
Associate in Medical Psychology*

HARRY R. STEVENS, PH.D.
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WILLIAM FRANKLIN STINESPRING, PH.D.
Professor of Old Testament

WIPPERT ARNOT STUMPF, PH.D.
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WOLFGANG TARABA, PH.D.
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JOSEPH MILLER THOMAS, PH.D.
Professor of Mathematics

JAMES NARDIN TRUESDALE, PH.D.
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ARLIN TURNER, PH.D.
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HALLAM WALKER, PH.D.
Instructor in Romance Languages

CALVIN LUCIAN WARD, PH.D.
Assistant Professor of Zoology

CHARLES EUGENE WARD, PH.D.
Professor of English

RICHARD LYNES WATSON, JR., PH.D.
Associate Professor of History

HENRY WEITZ, ED.D.
Associate Professor of Education

PAUL WELSH, PH.D.
Assistant Professor of Philosophy

PELHAM WILDER, JR., PH.D.
Assistant Professor of Chemistry

FREDERICK ELIPHAZ WILSON, A.M.
Associate Professor of German

CHARLES R. YOUNG, PH.D.
Instructor in History

To Former Students and to Prospective Students of the Summer Session

The Summer Session at Duke University makes available to Duke students, to students from other universities and colleges, to teachers in elementary and secondary schools, and to other special students a notable program of instruction in many fields of knowledge, both academic and professional.

Course programs offered during the summer are designed to meet special and particular needs as well as the more conventional requirements leading to specific degrees.

Undergraduates of Duke University who desire to accelerate their programs may complete the work for a degree in three years by attending two and one-half Summer Sessions.

Graduates of accredited high schools, both men and women, who have been admitted to the freshman class of Duke University may begin their work in the Summer Session.

Undergraduates from other colleges and universities may enjoy the special advantages of summer instruction at Duke and transfer earned credits to their own institutions.

Graduate students who have been admitted to the Graduate School to study for the Master of Arts, Master of Education, and Master of Arts in Teaching degrees will find courses arranged in sequence from summer to summer to meet their requirements.

Teachers from elementary and secondary schools who desire to earn credits toward the renewal of their certificates and who are interested in further teacher training in subject content and method may enroll in senior-graduate courses as special or unclassified students.

While the summer course program meets in many departments the needs of degree candidates, it goes beyond these limits in presenting also courses of wide general interest and, in addition, special non-credit lectures, concerts, plays, conferences, institutes, and workshops.

Duke University's ample and modern research facilities will be available during the summer to all properly qualified students. It is the hope of the University, of the summer faculty, and of the administrative officers that former students and new students will find increasing values in each summer spent at Duke.

THE DIRECTOR

Admission



THE general requirement for admission to the Summer Session is graduation from an accredited secondary school or its equivalent. Rejection of a student's application for admission to one of the University's Colleges or Schools does not preclude admission of that student to the Summer Session as a special or unclassified student.

Admission to specific courses offered in the Summer Session is governed by the student's academic status (freshman, sophomore, junior, senior, graduate, special or unclassified) and by the pre-requisites of the course in question.

Students in Residence at Duke University during the Spring Semester 1957

A Duke University student, either graduate or undergraduate, who plans to attend the Summer Session should at the time of pre-registration for the fall semester (see p. 20 for specific dates) enroll for the desired Summer Session courses. He need *not* file with the Summer Session the application blank at the end of this *Bulletin*.

Students Not in Residence at Duke University during the Spring Semester 1957

UNDERGRADUATES. New students seeking to enter Duke University as freshmen or as undergraduates with advanced standing, and undergraduates who wish to re-enter the University should write the Office of Admissions requesting regular application forms.

Undergraduates, both men and women, enrolled in other colleges and universities who desire to earn in the Duke University Summer Session credits which are to be transferred to their own institutions should apply directly to the Director of the Summer Session, Duke University, on the application form at the end of this *Bulletin*. They should give accurately and clearly all information called for on the application form.

GRADUATES. Students with graduate standing and teachers in service with or without the Bachelor's degree who wish to earn credits

toward the renewal or the advancement of their certificate and who do not wish to become candidates for a degree at Duke University should apply to the Director of the Summer Session on the application form at the end of this *Bulletin*.

Graduate students who are seeking admission to the Graduate School of Arts and Sciences and those who have been admitted to the Graduate School must apply to the Director of the Summer Session on the application form at the end of this *Bulletin*. Those who are seeking admission to the Graduate School *must also file* Graduate School application forms which may be secured by writing to the Dean of the Graduate School, Duke University, Durham, North Carolina.

Admission to Degree Candidacy

Credits earned during the Summer Session may be applied toward the requirements of a degree.

UNDERGRADUATES. A student seeking to enroll as a candidate for the Bachelor's degree from one of the colleges of Duke University must meet the entrance requirements set forth in the *Bulletin of Undergraduate Instruction* and be accepted by the Director of Admission. This *Bulletin* may be secured by writing the Office of Admissions, Duke University.

GRADUATES. A student seeking to enroll as a candidate for one of the advanced degrees offered by the Graduate School of Arts and Sciences of Duke University must meet the requirements set forth on pages 32-38 of this *Bulletin*.

Admission of Veterans

All veterans who plan to attend Duke University for the first time during the Summer Session of 1957 should have a Certificate for Education and Training ready to present at the time of registration. This form may be secured by applying to the Veterans Administration. In the event a student has previously been enrolled under the G. I. Bill of Rights and his last enrollment was at Duke University no Certificate is necessary. Any correspondence should be addressed to: The Veterans' Office, Allen Building, Duke University, Durham, N. C.

Financial Information, Living Accommodations, and Medical Care



Fees

The University Fee:

- Covering registration, tuition, and medical care.....\$15.00 per semester hour
- Teachers in full-time service in Elementary
and Secondary Schools..... 7.50 per semester hour
- Registered Nurses enrolled in Nursing Education courses 7.50 per semester hour

Laboratory Fees: (These where applicable are in addition
to the University Fee.)

- Marine Laboratory\$ 10.00

Fees Replacing University Fee:

- Medical Mycology\$100.00

Master's Degree Summer Session Fee:

- A candidate for the Master's degree who completes in the Summer Session
15 or more semester hours required for the degree and who finishes
the work in the Summer Session pays a degree fee of.....\$25.00
- A Master's degree candidate who is not required to pay the fee under
Item 1 above, but who takes a thesis examination during the Summer
Session, is required to pay a degree fee of.....\$10.00
- A Master's degree candidate who, in the fall or spring semesters, completes
15 or more semester hours required for the degree and who finishes
the work in the Summer Session without a thesis examination is not
required to pay the degree fee.

Auditing Fees (See p. 22 for definition):

1. Students registered for a full course program may audit non-laboratory
courses (with the permission of the Director) at no extra charge.
2. Students carrying less than a full course program may be granted per-
mission to audit a course or courses on payment of half the University
fee per semester hour audited.....\$7.50 per s.h.

Late Registration Fee:

- Students who fail to register prior to the first class day of a given course
will pay an extra fee of.....\$ 5.00

Fee for Course Changes:

- Course changes other than those required by the University will be made
only on payment of an extra fee of.....\$ 1.00

Fee for Make-up Final Examination:.....\$ 3.00

Refund of Fees:

- a. When applications for withdrawal are received by the Director of the Summer
Session before the close of registration on registration day, full fees will be refunded.
- b. When applications for withdrawal are received by the Director of the Summer
Session during the first four class days of a given term 80 per cent of the fees will
be refunded.
- c. When applications for withdrawal are received by the Director of the Summer
Session after the fourth class day there will be no refund of fees.

Student Aid

HALF-FEES TO TEACHERS AND REGISTERED NURSES: Teachers in full-time service in elementary and in secondary schools and registered nurses enrolled in Nursing Education courses are given a rebate of one-half the University fee. Teachers on leave of absence from their schools and teachers not currently employed are not eligible for this rebate.

SCHOLARSHIPS FOR PUBLIC SCHOOL TEACHERS: Duke University will award to a minimum of forty special scholarships of \$125.00 each to high school and elementary teachers on a competitive basis (not by a written examination) for the Summer Session of 1957. This scholarship program is designed to encourage teachers to begin or to continue their graduate studies leading to the A.M., M.Ed., or M.A. in Teaching degree.

Although successful applicants will not be required to become candidates for a degree, they must qualify for and receive admission to the Graduate School of Arts and Sciences.

All applications with supporting documents must be submitted by April 1, 1957. Selection and appointment of scholars will be completed by May 1, 1957.

Application blanks and complete information may be obtained from the Director of the Summer Session, Duke University, Durham, North Carolina.

LOANS: A number of loan funds have been established for the benefit of the students of Duke University. Several of these funds are available to students enrolled in the Summer Session. These funds are administered through a committee of officers of the University.

The committee, in approving loans, selects those students who from the standpoint of character, scholastic attainment, and degree of financial need are deserving of consideration.

The following regulations govern the operation of the Summer Session loan fund program:

1. No loan shall be made to a student who violates any of the regulations of the University or whose academic record is not satisfactory to the faculty.

2. All loans must be arranged for not later than one week after the beginning of a term.

3. Every applicant for a loan must give the names of two references who will be contacted by the Student Loan Office. Statements from these references must have been received and made a part of the borrower's file before any money will be advanced. Neither of these references may be a member of a borrower's family.

4. No loan will be made to defray any expenses other than those incurred during the Summer Session for the University fee.

5. All loans must be repaid within six months following the close of the Summer Session in which the loan is made.

6. Simple interest at the rate of six per cent annually shall be charged for all loans made during a summer session.

7. Applicants for loans should make application to the Loan Committee, Office of the Secretary, Duke University. A formal application for loan assistance may be made only on forms furnished in the Secretary's Office during the first week of each term. The granting or withholding of a loan is a matter entirely within the discretion of the Loan Committee. A student is expected to use all other possible means of securing financial assistance before applying for aid from a loan fund.

Dormitory Accommodations

The dormitory facilities of Duke University West Campus will be used for the 1957 Summer Session except in the case of the Marine Laboratory. The Men's Graduate Center will be used for graduate men who are regular residents of the Men's Graduate Center; however, dining halls in Men's Graduate Center will not be open during the Summer Session. An area in Few Quadrangle will be available to graduate men enrolled in the Summer Session only. An area in Craven Quadrangle and Few Quadrangle will be available to undergraduate men. Kilgo Quadrangle will be available for women with designated houses reserved for graduate women and undergraduate women. The University does not provide living accommodations in which married couples might live.

Most rooms are furnished for two persons. Only a limited number of rooms are furnished as singles for one person. Furniture consists of single beds, 39" x 74", with mattresses, an individual clothes closet for each person, a chest of drawers for two persons, a study table, chairs, bookcase, waste basket, and window shades. Linens, blankets, towels, and pillows are not furnished by the University.

The Marine Laboratory is located on Pivers Island adjoining the United States Bureau of Fisheries across the Newport River from Beaufort, North Carolina. Three cottage-type dormitories are available with a separate building for dining hall and social activity. All rooms in the Marine Laboratory dormitories are equipped for two persons.

Dormitory Rooms—Rates

Single Room	12 weeks' term.....	\$84.00	
	6 weeks' term.....	42.00	
	5 weeks' term.....	35.00	
	4 weeks' term.....	28.00	
	3 weeks' term.....	21.00	
	2 weeks' term.....	14.00	
	1 week's term.....	7.00	
Double Room	12 weeks' term.....	\$108.00	\$54.00 each person
	6 weeks' term.....	54.00	27.00 each person
	5 weeks' term.....	45.00	22.50 each person
	4 weeks' term.....	36.00	18.00 each person
	3 weeks' term.....	27.00	13.50 each person
	2 weeks' term.....	18.00	9.00 each person
	1 week's term.....	9.00	4.50 each person
Double Room Furnished as a Single Room and Occupied by One Person	12 weeks' term.....	\$96.00	
	6 weeks' term.....	48.00	
	5 weeks' term.....	40.00	
	4 weeks' term.....	32.00	
	3 weeks' term.....	24.00	
	2 weeks' term.....	16.00	
	1 week's term.....	8.00	

Applications for room reservations accompanied by the full amount of the room rent for the term concerned should be made to Duke University Housing Bureau, Duke Station, Durham, North Carolina. Rooms will be reserved in the order in which applications are received. Notification of assignments to rooms will be made about May 15 for the first term; about July 10 for the second term.

Rooms are available to applicants twenty-four hours prior to the registration for a specific term of the Summer Session. A room is to be vacated by the occupant within twenty-four hours after the last final examination. Any period of occupancy other than for a specific term of the Summer Session must be arranged for at the Office of the Housing Bureau, 03 Allen Building.

Applicants should be sure to express their preference as to roommates, if they have a preference. If no preference of roommate is expressed, the Housing Bureau will assign a roommate; however, the Office does not assume responsibility in this matter.

Estimated Cost of one term of Summer Session:

University Fee, 6 s.h.....	\$ 90.00
Teachers (elementary and secondary) in full-time service, and Registered Nurses in nursing education courses, \$45.00	
Dormitory Rooms (2 occupants, \$22.50 per person).....	22.50
Meals (Cafeteria selective: average per day \$2.00).....	72.00
Books and Class Materials \$7.00 to \$10.00.....	8.50
Miscellaneous (laundry, etc.).....	12.00
Total (elementary and secondary teachers in full-time service and Registered Nurses in nursing education courses deduct \$45.00).....	\$205.00

Medical Care

With the exceptions noted below, full medical and surgical care is furnished to all regularly matriculated students of the University during the Summer Session at no additional cost to them beyond the University fee for each term of residence in the Summer Session or any shorter period. This service is under the direction of the University Physician with the cooperation of the staff of Duke Hospital. It includes hospitalization for a maximum period of six days, medical and surgical care, drugs, dressings, X-ray work, and ward, but not special nursing. Refraction of eyes, treatment of teeth and of all chronic and pre-existing conditions, such as diseased tonsils, hernias, elective surgery, chronic skin conditions, endocrine disturbances, etc., or accidents or illness occurring during vacations or while off the campus, are not included in this service. The cost of braces and necessary orthopaedic appliances and of blood, as well as special nursing, must be borne by the student. A charge for board will be made of the student while he is in the hospital. All necessary telephone and telegraph charges will be borne by the student. If students have insurance providing hospitalization, surgical or medical benefits, the benefits shall be applied to the cost of their medical care.

No illness is treated in dormitory or other rooms occupied by students. Students needing treatment for minor medical or surgical conditions have the facilities of the Student Health Office in the Hospital between 9:00 a.m. and 5:30 p.m. on week-days. Emergency room care is available at night and on Saturday afternoons and Sundays. For admission to the hospital, or for X-ray and consultation services, a student *must* present the 1957 Summer Session Health and Recreation Card as evidence that he is matriculated in the Summer Session and entitled to hospitalization. Such a card is not issued to students who register for less than 3 semester hours' credit.

Registration



Definition of Terms

REGISTRATION. A student has completed registration for the Summer Session when:

1. His course program has been written and approved by the dean of the school or college in which he is enrolled or by the Director of the Summer Session in the case of the special or unclassified student.

2. Summer Session forms have been completed properly by the student in the Summer Session Office.

3. Summer Session University fees have been paid.

PRE-ENROLLMENT. The term pre-enrollment refers only to the writing of the course program and its approval by the proper deans or by the Director of the Summer Session in the case of the special or unclassified student. *Pre-enrollment alone does not constitute registration.*

General Registration

CLASSES BEGINNING JUNE 12. All Summer Session students whose classes begin on June 12, Term I, who *do not* complete registration in the Summer Session Office, 119 Allen Building, on or before June 5 *must* present themselves at general registration in the new gymnasium on June 11 to register. Students will register during 30-minute periods alphabetically according to *surname* as indicated in the following table.

<i>Time</i>	<i>Registrants (Surname)</i>
9:00- 9:30	N - P
9:30-10:00	Q - R
10:00-10:30	S
10:30-11:00	T - V
11:00-11:30	W - Z
11:30-12:00	A - B
12:00-12:30	C
2:00- 2:30	D - E
2:30- 3:00	F - G
3:00- 3:30	H - J
3:30- 4:00	K - L
4:00- 4:30	Mc - M

CLASSES BEGINNING JUNE 18. All Summer Session students whose classes begin on June 18, Term I, who *do not* complete registration in the Summer Session Office on or before June 15 must register in the Summer Session Office, 119 Allen Building, on June 17.

CLASSES BEGINNING JULY 1. All Summer Session students whose classes begin on July 1, Term I, must complete registration in the Summer Session Office on or before June 29.

CLASSES BEGINNING JULY 20. All Summer Session students who wish to register for courses offered during Term II or for research during Term II may register in the Summer Session Office on July 8 through July 15. All students who *do not* register for second term during this period *must* register in the Summer Session Office, 119 Allen Building, on July 19.

CLASSES BEGINNING ON OTHER DATES. All Summer Session students registering for courses beginning on dates other than those specified above must complete registration in the Summer Session Office *before* the date on which their classes begin. *Registration on the day on which classes are scheduled to begin will be considered late registration.*

Late Registration

Any student who fails to register on or before the dates specified in the preceding paragraphs will be charged a fee of \$5.00 for late registration. No student will be permitted to register for a 3 semester hour course after the third class day (June 14, Term I; July 23, Term II); a 4 semester hour course after the second class day (June 19, Term I; July 23, Term II). Changes in courses other than those required by the University will require a payment of \$1.00 for each change made. All changes must be approved by the dean of the school or college in which the student is enrolled or, in the case of the special or unclassified student, by the Director of the Summer Session. These registration rules are enforced rigidly.

Since Summer Session courses present a program of study in more concentrated and rapid form than in the regular semesters, students are advised to register on time and to be present at all class sessions.

Advance Registration

STUDENTS IN RESIDENCE AT DUKE UNIVERSITY DURING THE SPRING SEMESTER 1957.

WRITING COURSE PROGRAMS IN THE SCHOOLS AND COLLEGES. Students in residence at Duke University during the Spring Semester 1957, both graduate and undergraduate, who plan to enroll for courses

offered in the 1957 Summer Session or to carry on research during the period of the Summer Session will write course programs and have them approved in their respective schools or colleges on the dates specified below:

Trinity College

April 29-April 30—rising seniors

May 1-May 3—rising juniors

May 6-May 8—freshmen and rising sophomores

College of Engineering

April 24-25—rising seniors

April 30—rising juniors

May 2—rising sophomores

Woman's College

April 29-April 30—rising seniors

May 1-May 3—rising juniors

May 6-May 8—rising sophomores

The School of Nursing

May 2-May 3—all students planning to attend the Summer Session

The Divinity School

May 2-May 3—all students planning to attend the Summer Session

The Graduate School of Arts and Sciences

May 6-May 7—all students planning to attend the Summer Session

ADVANCE REGISTRATION IN THE SUMMER SESSION OFFICE. Students in residence whose course programs have been written and approved by their respective colleges on the dates indicated above may complete their registration in the Summer Session Office, 119 Allen Building on the following dates:

Graduate students

May 6 through May 7

Undergraduate students

May 17 through June 5

Registration in the Summer Session Office includes:

1. Completion of various Summer Session forms.
2. Payment of University fees.

A student who registers with the Summer Session Office during this period *will not* be required to be present at general registration on June 11. He will begin his class work on the date his classes are scheduled to begin: June 12, June 18, or July 1.

STUDENTS NOT IN RESIDENCE AT DUKE UNIVERSITY
DURING THE SPRING SEMESTER 1957.

ADVANCE REGISTRATION BY MAIL. Students not in residence at Duke University during the Spring Semester 1957—new undergraduate students seeking to enter as degree candidates, graduate students who are not candidates for an advanced degree at Duke University, graduate and undergraduate students of other colleges and universities desiring to earn credits for transfer, public school teachers and college teachers (not advanced degree candidates)—may register by mail. Advance registration by mail includes:

1. Completion in full of the application form at the end of this *Bulletin*.

2. Admission to the Summer Session by the Director of the Summer Session and, in the case of students seeking to enter Duke University as degree candidates, admission by the dean to the school or college of Duke University concerned.

3. Completion in full and return of forms required by the Summer Session Office by June 5.

4. Payment of University fees by June 5.

A student may *pre-enroll* by mail without paying the University fees, but he *cannot register in advance* without doing so.

Students who complete registration by mail on or before June 5 need not be present at the general registration on June 11.

DEGREE CANDIDATE GRADUATE STUDENTS NOT IN RESIDENCE DURING THE SPRING SEMESTER 1957. All graduate students not in residence during the Spring Semester 1957 who are candidates for an advanced degree in the Graduate School of Arts and Sciences of Duke University *must* present themselves for registration at the gymnasium on June 11. They cannot complete registration by mail because:

1. Their program of study for the summer must be approved by their Director of Graduate Studies.

2. Their course programs must be written and approved by the Graduate School of Arts and Sciences.

These students may pre-enroll by mail with the Summer Session Office and may pay their fees in advance, but they cannot complete their registration.

Academic Regulations



Kinds of Course Enrollment

SUMMER SESSION courses may be taken for "credit" or for "non-credit" or may be "audited." A student's program may be exclusively in one of these categories, or may combine any two of them or all three. Students taking a full or partial program for "credit" may enroll as auditors or as non-credit students in any number of additional courses.

CREDIT. The Summer Session term "credit" does not mean degree credit at Duke University unless the student has been admitted as a degree candidate by one of the colleges or schools of the University. A student taking a course for credit is expected to do all the work required and to take the final examination, and he will receive a grade. G.I. Bill benefits are available only to those veterans who enroll for credit.

NON-CREDIT. "Non-credit" enrollment is available to the student who wishes the privilege of participating in class discussions, exercises, and laboratory assignments but does not wish to take the examinations either mid-term or final. A "non-credit" student may do as much of the work of the course as he desires, but he may not take the final examination and he will not receive a grade. Full fees of \$15.00 per semester hour are required in "non-credit" enrollment.

AUDIT. An auditor is entitled to listen to lectures and class discussions, but he may not participate in discussions or take examinations. Students may not enroll as auditors in laboratory courses. A student carrying a full program for credit may be given permission to audit as many courses as he desires without additional fees. Students carrying less than a full program for credit may secure permission to audit but are required to pay the auditing fee of \$7.50 per semester hour.

Eligibility for Course Enrollment

Courses numbered 1-49 are primarily for freshmen, or freshmen and sophomores. Courses numbered 50-99 are ordinarily for sophomores, or sophomores and juniors. Courses numbered 100-199 are designed for juniors and seniors. Courses numbered 200-299 are planned for

seniors and graduates. Courses numbered from 300 up admit graduate students only. Courses numbered from 200 up are limited in enrollment to 25 students.

Credits Allowed in Summer

The Summer Session courses are of the same quality and credit value as courses in the regular semester. Credit earned in the Summer Session is in terms of semester hours. The majority of Summer Session courses carry 3 semester hours' credit and require one term in residence. A limited number of basic courses in the sciences carry 4 s.h. credit (Chemistry, Geology, Physics, Zoology). Some introductory foreign language courses are given on an intensive basis. A 3 s.h. course in these introductory language courses will constitute the student's full load for half of the term. A limited number of courses in Nursing Education are given on an intensive basis.

The Normal Course Program

The normal and maximum program for one term of the Summer Session is 6 semester hours. The 4 semester hour courses in the sciences run for four weeks and one such course constitutes a full course program. Four semester hours courses do not meet on Saturdays.

Grading

Only a student taking a course for credit will receive a grade. The grade given represents the quality of the work done in the course.

PASSED.

Undergraduate Grades

A — excellent

B — good

C — average

D — poor but passing

Graduate Grades

E — exceptional

G — good

S — satisfactory

FAILED. A grade of F indicates that the student has failed the course, and in order to receive credit for the course he must repeat the work in class.

INCOMPLETE. A grade of I may be reported by the instructor if for any reason he is unable to report the final grade at the regular time. Incomplete courses must be completed before the close of the succeeding semester; otherwise the I is recorded as F, and the course must be repeated in class if the student is to receive credit for it.

ABSENT FROM FINAL EXAMINATION. The grade X indicates that the student was absent from the regularly scheduled examination. A student absent from examination, if the absence has been excused by the dean of the college or school in which he is enrolled or, in the case of the special or unclassified student, by the Director of the Summer Session, may receive an examination upon the payment of \$3 to the Treasurer of the University. The instructor concerned arranges for the examination in cases where absences are excused. A student with an X grade who has not obtained a passing grade before the end of the semester following that in which the X was incurred is regarded as having failed in the course concerned and must repeat the work in class in order to receive credit. If a student's absence from an examination is not excused by the dean of the college or school in which he is enrolled or, in the case of the special or unclassified student, by the Director of the Summer Session, his grade for the course concerned is recorded as F.

Dropping of Courses

If a student drops a course without permission from the dean of the school or college in which he is enrolled or, in the case of the special or unclassified student, the Director of the Summer Session, the grade for that course is recorded as F. If he drops a course with permission, the grade for that course is F unless, in the judgment of the dean or director, circumstances do not justify this penalty.

Withdrawal from the Summer Session

If a student wishes to withdraw from the Summer Session, he must notify both the dean of the school or college in which he is registered and the Director of the Summer Session.

Absences

An undergraduate student who incurs more than three absences in a course (whether excused or unexcused) is ordinarily debarred from the course. Should he be permitted to remain in the course full credit will not be allowed. The amount of reduced credit will be determined by the Director of the Summer Session. Days missed through late registration are counted as absences, and three tardies in a given course are counted as one absence.

An undergraduate degree candidate in Duke University who incurs more than three absences in a course must confer immediately with the Dean of his or her college, who in turn will recommend to the Director of the Summer Session whether the student may continue in the course. A special or unclassified student who incurs more than

three absences in a course must confer immediately with the Director of the Summer Session who will determine whether the student may continue in the course.

Examinations

Final examinations in courses are held on the two last days of each term. Final examinations for short courses which occupy the student's complete program will be held on the last day of the course. The examination dates for 1957 are:

First term: July 16-17.

Second term: August 23-24.

Courses in science for the first term have been scheduled so that their final examination will come on July 16. The science courses which begin July 22 and run for four weeks will have their final examination on August 16. The University has no provision for giving examinations *in absentia*. Students absent from examinations for valid reasons are permitted a liberal extension of time to return to the University for completion of credit.

Credits for Transfer

A student desiring either graduate or undergraduate credits transferred from Duke University to his university or college as degree credit must request from the Director of the Summer Session, Duke University, a "Course Approval Form" to be completed by the student's Dean or Registrar and returned to the Director of the Summer Session, Duke University.

Professional Credits Toward Teachers' Certificates

Professional credits toward teachers' certificates are granted by the various state boards of education, each in accordance with its own carefully planned rules. Teachers in service, before enrolling for certification credit, should consult the rules laid down by their State Board of Education. If necessary, they should send to their State Board of Education a list of the courses in which they plan to enroll and inquire whether these will be acceptable for certification credit.

University Services, Publications, and Student Activities



Appointments Office

THE APPOINTMENTS OFFICE is maintained in Page Building the year around. The services of this Office are available without charge to students and teachers registered for a degree in Duke University and to school officials who may be seeking the services of new teachers. Students interested in securing employment through the Appointments Office should register with this Office.

The Bureau of Testing and Guidance

The University maintains a Bureau of Testing and Guidance which provides a centralized program of educational, vocational, and personal counseling for students. In addition, the Bureau administers special group testing programs for University schools and departments and serves as the local testing center for a wide variety of national testing programs. The Bureau also carries on programs of research in the field of measurement and counseling. Although the counseling, testing, and research services of the Bureau are designed primarily to meet the needs of the students, the faculty, and the staff of Duke University, these services are made available to individuals and organizations outside the University as its facilities permit. Requests for further information should be addressed to the Director, Bureau of Testing and Guidance, Duke Station, Durham, North Carolina.

Post-Doctoral Research

Scholars engaged in post-doctoral research find it advantageous and sometimes essential to use in summer the resources of the Duke University libraries. The University welcomes these visitors and makes available to them the living accommodations of the dormitories and the dining halls during the Summer Session, June 11 to August 24. Application for these post-doctoral research privileges must be made in advance by letter to the Director of the Summer Session, giving the applicant's present position, the specific field of his research interest, and the dates during which he desires to be in residence. Approved

applicants will be accepted subject to the availability of library and of dormitory space.

The Sundial

During the Summer Session the University will publish each Saturday *The Sundial*, an official calendar announcing events—academic, social and recreational—of the following week. This calendar also includes official notices concerning academic requirements. Students are expected therefore to read *The Sundial* regularly.

Recreation and Social Activities

The Summer Session will provide a varied program of entertainment and recreation. These plans include movies, presented once weekly by Quadrangle Pictures; weekly summer dances and open house social evenings with games for those who do not care to dance. Tours to areas of interest can be arranged for week-ends. Both the mountains and the seashore are easily accessible. Adequate facilities are available for those interested in swimming, tennis, and other sports. State clubs organized for the summer play an active part in all social activities.

Resources of the University



THE UNIVERSITY LIBRARIES, with 1,250,000 volumes and 1,850,000 manuscripts, provide exceptional resources and facilities for study and research by undergraduate and graduate students and visiting scholars. Between 40,000 and 50,000 volumes are added annually, while eighty foreign and domestic newspapers and 4,000 periodicals are received currently. There is also a large collection of microfilms of rare books, newspapers, and periodicals. Study facilities are provided for 250 graduate students in the air conditioned stacks of the General Library.

All libraries of the University are open for use throughout the summer. A "Student's Guide to the General Library," and a brochure on "The Library of Duke University" which describes the building and collections in general detail are available on request addressed to the Librarian of the University.

The laboratories in the various Science Departments (Botany, Chemistry, Physics, Psychology, and Zoology) are designed for both

teaching and research. Ideal locations for special work in some of the sciences are available at Duke University Marine Laboratory at Beaufort, North Carolina; at Highlands Biological Laboratory at Highlands, North Carolina; in the Duke Forest at Durham, North Carolina; and in the Sarah P. Duke Gardens on the West Campus of Duke University.

The Chapel, home of Duke University Church, interdenominational, is open all summer. The church encourages the cultivation of the spiritual and moral life of students through participation in the service of worship which is held each Sunday morning at eleven o'clock. The pulpit is occupied by a regular University Preacher, or a special visiting preacher. Choral music for these services is provided by a volunteer student choir.

Organ recitals are presented periodically by the University Organist, and Carillon recitals twice a week, on Sunday afternoon and Thursday evening, by the University Carillonneur.

Special Conferences and Courses



SPECIAL PROGRAMS FOR TEACHERS OF SCIENCE AND MATHEMATICS: In place of the annual Laboratory Conference for Teachers of Science and Mathematics, it is anticipated that the Summer Session will offer a number of special programs at the graduate level designed specifically for high school teachers in these fields. For detailed information on the programs, teachers should write The Director of the Summer Session, Duke University, Durham, North Carolina.

CONFERENCE ON ELEMENTARY EDUCATION: June 13-14, 1957. This conference will be the third in a series of conferences dealing with areas of learning in the elementary school. The area to be considered in the 1957 conference will be social studies. More than 200 elementary school teachers, principals, and supervisors attended each of the two previous conferences—the first on arithmetic, the second on science.

The general theme of the 1957 program will be "The Teaching of Basic Concepts in the Social Studies in the Elementary School." Demonstrations and group discussions at various grade levels will be provided in the schedule of events for the two days.

Dr. W. Linwood Chase, Dean of the School of Education, Boston

University, will be the chief consultant for the Conference. He is Past President of the National Council for the Social Studies and is widely known as a teacher, writer, and lecturer in social-studies education.

For further information write to the Director of the Summer Session, Duke University, Durham, North Carolina.

SUMMER CONFERENCE OF THE NORTH CAROLINA ENGLISH TEACHERS ASSOCIATION: Principal meetings of the fifteenth annual English Institute of the North Carolina English Teachers Association will be held at Duke University on July 4-6.

The annual luncheon and the afternoon meeting that follows will be held at the University of North Carolina, Chapel Hill, North Carolina, on July 5.

Full details of the program will be announced at the spring meeting of the Association. For further information write Professor F. E. Bowman, Department of English, Duke University, or the Executive Secretary, Professor Earl H. Hartsell, Box 1050, Chapel Hill, North Carolina.

CONFERENCE ON SCHOOL LAW: A conference on school law will be held on Duke University Campus on June 18-19. The program is planned for the benefit of administrators and teachers in schools and colleges. Speakers and consultants well known in the field of school law will participate in the two-day conference.

A CLINIC IN PREACHING: From July 1-18, 1957, a special Clinic in Preaching will be inaugurated under the direction of Dean James T. Cleland. It will not yield academic credit. It will be designed for ministers who have served more than five and less than fifteen years in the active pastorate, and will be limited to thirty persons from the major Protestant denominations. Special attention will be paid to recent theological trends and their bearing on preaching, and to the hearing and criticism of sermons. Detailed information will be published later by the University.

THE SCHOOL FOR APPROVED SUPPLY PASTORS: The ninth session of the Duke Divinity School's short term school for supply pastors and traveling preachers taking the Conference Course of Study will meet July 16 to August 9, 1957.

The new curriculum as outlined in the Discipline of the Methodist Church will be followed.

The courses offered will give credit in each of the four years' work. All texts must be read, using the Handbook as a guide, before coming to the school.

Classes begin with the first morning period July 17 and close at 1:00 p.m. August 9. In addition, there will be a series of workshops and illustrated lectures in the fields of interest.

A number of scholarships are available for those who need aid in attending the school. Students desiring such aid must pre-register and receive a scholarship allotment before coming to the sessions of the school.

For a schedule of courses, registration blanks, scholarship information, and other data, write Dr. W. A. Kale, Box 4353, Duke Station, Durham, North Carolina.

SPECIAL FEATURES OF THE PROGRAM IN ROMANCE LANGUAGES: The Department of Romance Languages will offer course programs in French and in Spanish stressing: 1) the basic elementary work and 2) the special needs of high school teachers. Duke University's new language audio laboratory under the direction of a full time instructor will be available to students in both language programs.

HIGHLANDS BIOLOGICAL STATION: Duke University holds a subscribing instructional membership in the Highlands Biological Station at Highlands, North Carolina, on the southern edge of the Blue Ridge Mountains at an elevation of 4,118 feet. The situation and the region offer an excellent opportunity for field studies and limited laboratory work. A limited number of qualified students in Botany and Zoology may make arrangements to carry out research at this station.

WATER WORKS SCHOOL OF THE NORTH CAROLINA WATER WORKS ASSOCIATION: The 1957 Water Works School of the North Carolina Water Works Association will be conducted by the Department of Civil Engineering, College of Engineering, Duke University, with the cooperation and sponsorship of the North Carolina Section of the American Water Works Association, North Carolina League of Municipalities, and North Carolina State Board of Health. The school will be held August 19-23, 1957, at the College of Engineering, Duke University, Durham, North Carolina.

MEDICAL MYCOLOGY: A month's course in Medical Mycology, under the direction of Dr. Norman F. Conant, is to be offered at Duke University School of Medicine and Duke Hospital, July 1 to July 27, 1957. The course will be offered every day in the week, except Sunday, and has been designed to insure a working knowledge of the human pathogenic fungi within the time allotted.

Emphasis will be placed on the practical aspects of the laboratory as an aid in helping establish a diagnosis of fungus infection. Insofar as possible and as patients become available, methods of collecting materials in the clinic for study and culture will be stressed. Work with patients, clinical material, cultures and laboratory animals will serve as a basis for this course. Also, an opportunity to study patho-

logic material, gross and microscopic, will be given those whose previous training would allow them to obtain the greatest benefit from a study of such material.

The enrollment for the course will be limited and the applications will be considered in the order in which they are received. An attempt will be made, however, to select students on the basis of their previous training and their stated need for this type of work.

A fee of \$100.00 will be charged for this course, upon the completion of which a suitable certificate will be awarded. Please direct inquiries to Dr. Norman F. Conant, Professor of Mycology, Duke University School of Medicine, Durham, North Carolina.

Graduate Study in the Summer Session



A STUDENT who holds a bachelor's degree and who desires to take advanced courses at the 200-level for professional or other reasons but not for the purpose of earning an advanced degree at Duke University should apply to the Director of the Summer Session for admission as a special or unclassified student. Credit earned while the student is so enrolled is counted as unclassified credit but *not* as credit toward an advanced degree.

A student who wishes to work for an advanced degree at Duke University must apply to the Dean of the Graduate School for admission to the Graduate School of Arts and Sciences. Upon securing admission the student registers with both the Summer Session Office and the Graduate School Office during the official registration period.

In order that application to the Graduate School for summer work be given due consideration, the student should submit all required documents to the Dean of the Graduate School by the date of June 1 preceding the first term, and by the date of July 10 preceding the second term of the Summer Session. It is difficult to process properly applications received after these dates. No student may register with the Graduate School until an application has been completed and admission has been granted.

Admission to the Graduate School

Admission may be granted to a student who has received an A.B. or B.S. degree from an accredited institution after a four-year course of study. The undergraduate record should be well-rounded and of such quality as to give positive evidence of capacity for success in graduate study. Before admission can be granted, the student must submit for appraisal the following documents: (a) an official transcript of all his college or graduate work, to be forwarded directly from the registrar of his college to the Dean of the Graduate School of Duke University; (b) two letters of recommendation from persons best qualified to appraise the student. In the departments of Economics and Psychology, scores on the profile, aptitude and advanced test in major subject of the Graduate Record Examination are re-

quired before full admission can be granted. If possible, the student should take this examination in advance of his intended registration. Arrangements can usually be made through officials at the student's college, or by correspondence with the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey. Should a student be unable to take the examination before the final admission date, he may—if his other documents are acceptable—be granted "provisional" admission until he takes the examination, which he must arrange to take at the first time it is offered after his "provisional" admission. Students admitted to the Graduate School will be so notified by the Director of Admission.

Registration of Graduate Students

Students who have been admitted to the Graduate School should present themselves for registration at the official registration period, June 11 for the first term, and July 19 for the second term. They are required to register with both the Summer Session and the Graduate School.

Course Work Leading to Degree

Graduate students who wish to work toward an advanced degree in the Summer Session, particularly in Chemistry, Economics, Education, English, History, Mathematics, Religion, Sociology, Spanish, and Zoology, will find a selection of courses offered by members of the Duke faculty and by visiting professors. Other departments ordinarily offering sequences of work leading to the Master of Arts degree in a series of summer terms are Botany, Political Science, and Psychology.

The Ph.D. and Ed.D. Degrees

STUDY FOR THE PH.D. DEGREE: Students who are interested in working toward a Ph.D. degree should note in detail the requirements as outlined in the *Bulletin* of the Graduate School of Arts and Sciences. Of the three years required as minimum residence, not more than one year can be earned in Summer Sessions. Full-time enrollment for one term of the Summer Session is counted as one-fifth of an academic year.

STUDY FOR THE ED.D. DEGREE: Students who are interested in working toward an Ed.D. degree should consult the detailed statement in the *Bulletin* of the Graduate School of Arts and Sciences. Requests for specific information regarding residence and programs for the Ed.D. degree should be sent to the Director of Graduate Studies, Department of Education.

Requirements for the Master of Arts Degree

LANGUAGE REQUIREMENTS: The candidate for the A.M. degree must have a reading knowledge of at least one foreign language. (The several departments reserve the right to specify which foreign languages are acceptable.) The language requirement may be satisfied in either of two ways: (1) by successfully passing an examination, officially conducted by the appropriate foreign language department at Duke University, or (2) by a transcript showing the completion of the third college year of one language, or the second college year of each of two acceptable foreign languages.

If the student must take the examination to satisfy this requirement, he may request—should he feel well qualified—the language examination required of candidates for the Ph.D. degree. By passing this examination, he may satisfy the requirements for both degrees at one time.

MAJOR AND MINOR SUBJECTS: As a prerequisite to graduate study in his major subject, the student must have completed a *minimum* of 12 semester hours of approved college courses in that subject, and 12 additional semester hours in that subject or in related work. Since some departments have specific requirements for undergraduate preparation the student should read carefully the special requirements listed by his major department, which are included as headnotes to the course offerings in the *Bulletin* of the Graduate School.

To complete the course requirements for the A.M. degree, the student must take 24 semester hours of graduate courses, of which at least 12 must be in the major subject. Of the remaining 12, he must take 6 hours of course work in a minor subject, leaving 6 hours of course work to be taken in either the major or minor field, or in another field approved by the major department and the Dean of the Graduate School. In addition to the course work, the student must present a thesis which carries a credit of 6 semester hours. Thus, the total credit required for the A.M. degree amounts to 30 semester hours.

THE THESIS FOR THE MASTER OF ARTS DEGREE: The thesis for the A.M. degree should demonstrate the student's ability to collect, arrange, interpret or report pertinent material on his special research problem. Although a publishable document is not required, the thesis must be written in a literate style, and should exhibit the student's competence in scholarly methods and procedures.

REGULATIONS AND PROCEDURES: On or before June 26 or July 31 (see calendar) of the summer in which it is expected the degree will be conferred, the student must file the final title of the thesis with the Dean of the Graduate School. Official blanks are provided for this purpose.

Four bound, typewritten copies of the thesis must be submitted, in approved form, to the Dean of the Graduate School at least three to five days before the date of the thesis examination. The copies will then be distributed to the several members of the examining committee.

THE EXAMINING COMMITTEE AND THE EXAMINATION: After consultation with the professor who has directed the thesis, the Dean of the Graduate School appoints an examining committee composed of the director of the thesis and two other members of the Graduate Faculty. The candidate appears before this committee for an examination, which lasts for about one and one-half hours. The subject matter covered in the examination is usually restricted to the thesis and to the major field.

If the candidate passes his examination, the examining committee certifies to this fact by signing the title page of the thesis. The candidate then returns the original and one carbon copy of the thesis to the Dean of the Graduate School for deposit in the University Library.

Requirements for the Master of Education Degree

PREREQUISITES: The degree of Master of Education is granted ordinarily only to teachers or to others engaged in educational work.

Before a student is admitted to graduate study for this degree, he should have completed, on the undergraduate level, a minimum of 18 semester hours of approved work in Education, including courses in Educational Psychology, and courses in the History of Education, Educational Sociology, or School Administration.

REQUIREMENTS FOR THE DEGREE: The M.Ed. degree may be earned either with or without the presentation of a thesis.

WITHOUT THESIS: Students who elect this plan must present a total of 30 semester hours. Eighteen hours of this work must be taken in the Department of Education, which includes a departmental major (i.e., in Nursing Education, Elementary Education, Public School Administration, Public School Supervision, or Secondary Education) of at least 12 semester hours.

At least six semester hours are devoted to a minor in a department other than Education, and six hours may be taken either in the Department of Education, the minor department, or another department approved by the major department.

Toward the end of his residence the student must pass a comprehensive examination on his departmental major. Permission to take such examinations must be obtained from the Director of Graduate Studies of the Department of Education, and a notice of intention

must be filed with him at least three weeks before the announced dates of the examinations.

WITH THESIS: Students who elect this plan are permitted to substitute a thesis for 6 semester hours of the required course work. The student must present a thesis subject approved by the professor who is to direct it, by the Director of Graduate Studies in Education, and by one other member of the staff of the Department of Education. Two of the three members of the approving committee must be permanent members of the Duke University Graduate Faculty. The title of the thesis must be filed with the Dean of the Graduate School at the same time as the titles for the A.M. theses (see p. 34).

In addition to the thesis, the student must present 24 semester hours of course credit. Of the 24 hours, 18 must be taken in the student's major department. The minor requirement is satisfied by 6 semester hours of course work taken outside of the Department of Education.

The regulations regarding submission of typed copies of the thesis and the thesis examination are the same as those for the A.M. degree (see p. 35).

Requirements for the Master of Arts in Teaching Degree

PREREQUISITES: The degree of Master of Arts in Teaching is designed for both teachers in service and recent graduates of liberal arts colleges who wish to enter public school teaching.

A student should normally have completed a minimum of 12 semester hours in his proposed major subject and an additional 12 semester hours in the major or related subjects. In the event that a student wishes to undertake a graduate major different from the undergraduate major, the prerequisites are possible of modification upon the recommendation of the student's committee and the approval of the Dean of the Graduate School.

PROGRAMS FOR THE DEGREE: One of two programs may be arranged, in consultation with the student's committee: (1) A major in Education of 18 to 24 semester hours and 6 to 12 semester hours in non-education courses. (2) A major in non-education courses of 18 to 24 semester hours and 6 to 12 semester hours in Education. In both programs a minimum of 30 semester hours is required, except when Education 215 and 216 are taken, in which case a minimum of 36 semester hours is required.

The non-education courses are to be taken in one or more subjects ordinarily taught in the secondary schools. The amount and distribu-

tion of this work will be determined by the needs of the individual student.

The Master of Arts in Teaching may be earned with or without the presentation of a thesis. If a student, in consultation with his committee, elects to present a thesis, 6 semester hours of the total of 30 semester hours required will be allotted to thesis research. He will then be required to complete 24 semester hours of course credits. The regulations concerning the writing and submission of the thesis, and the examination of it, are the same as those governing the thesis for other masters' degrees offered in the Graduate School.

NEW PROGRAM FOR MASTER OF ARTS IN TEACHING WITH INTERNSHIP: A limited number of selected graduates of liberal arts colleges who desire to prepare for high school teaching will be admitted to a special internship program at Duke University. The program combines graduate study in professional education and liberal arts with a half-year of full-time, paid teaching experience. Successful completion of the program will qualify a candidate for the degree of Master of Arts in Teaching.

Candidates will normally begin the program at the opening of the first summer session of 1957 and complete it in June, 1958. A few persons will be allowed to begin the program in the fall of 1957 and complete it in August, 1958. Candidates will spend the summer and one of the semesters of the succeeding school year in residence at the University. During the other semester they will be employed as regular teachers in a cooperating public school system. During this semester they will receive full salary and will work under the joint supervision of the public school and the University. The program will meet training qualifications for the advanced, or graduate, teacher's certificate in most states.

The salary for the semester of teaching will, in effect, constitute a substantial award to candidates selected for the program. Applicants will be considered, as are candidates for other awards, on a competitive basis. The best qualified applicants will be chosen on the basis of undergraduate record, recommendations, and evidence of interest in becoming high school teachers. It is desirable, but not required, that applicants arrange to be interviewed in connection with their applications for the program. Application forms may be secured by addressing a request to the Dean of the Graduate School, Duke University, Durham, North Carolina. Completed forms, together with all supporting documents, must be returned to the Dean of the Graduate School not later than March 1, 1957. Details concerning the program can be obtained by writing the Chairman, Department of Education, Duke University.

THE COMMITTEE: Each candidate for the degree will be as-

signed a committee, appointed by the Dean of the Graduate School, to plan his program of study.

This committee will consist of three members, at least one of whom will be from the Department of Education, and at least one from another department. The chairman of the committee will normally be chosen from the department of the major.

REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE: The requirements for the M.S. degree are the same as those for the A.M. degree except that there is no language requirement.

CANDIDACY FOR THE MASTER'S DEGREE: To be considered as a candidate for a Master's degree (A.M., M.Ed., M.A.T., M.S.) the graduate student must (1) have made passing grades in all courses taken during the first period of residence (If he registers for fewer than 12 semester hours of graduate courses during his first period of residence, he must make passing grades on the initial 12 hours of graduate courses), (2) have made a grade of "G" or "E" on at least 3 semester hours of this work, and (3) have received the approval of the major department (or in the case of the M.A.T., of the supervisory committee).

If he does not fulfill these conditions on the initial semester hours, but does better work, signified by a substantial number of "G's" or "E's" in a subsequent term, he may be granted permission then to re-apply for candidacy. The requirements for admission to candidacy for the M.Ed., the M.A.T., and the M.S. degrees are the same as those stated above for the Master of Arts degree.

TRANSFER OF CREDITS: Under certain circumstances a maximum credit of 6 semester hours may be allowed for graduate courses completed elsewhere. Approval for the transfer of credits will not be given until the student has spent one semester in residence. The acceptance of credit up to this amount will not reduce the minimum period of full-time registered residence at Duke University. In no case will credit be allowed for extension or correspondence courses.

With the approval both of the student's major department and the Dean of the Graduate School, a student who is granted such transfer credit may be permitted to register for as much as 12 semester hours of thesis research instead of the usual 6 semester hours. Or he may be permitted to fill out his schedule with as much as 6 semester hours of further undergraduate training or 6 semester hours of required language courses on the undergraduate level.

TIME LIMITS FOR COMPLETION OF THE MASTER'S DEGREE: The candidate for any Master's degree must complete all requirements within a period of six calendar years from the date of his initial registration. Credits earned over a longer period of time cannot be credited toward a degree.

Undergraduate Study



UNDERGRADUATES in Duke University who desire to accelerate their programs may complete the work for a degree in three years by attending two and one-half summer sessions. By attending both terms of the Summer Session it is possible for a student to earn as many as twelve semester hours of credit. Instruction of interest to undergraduates will be offered in the summer of 1957 in most of the departments and colleges.

Undergraduates from other colleges and universities may enroll for summer instruction at Duke and transfer their earned credits to their own institutions.

School of Nursing



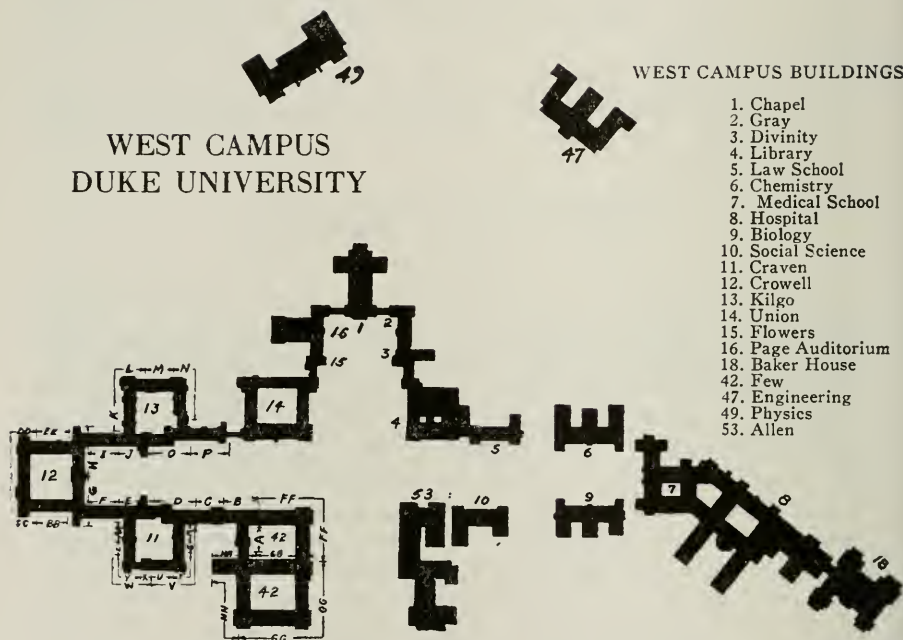
BOTH the Diploma and Degree programs of the School of Nursing include courses in the Summer Session. Persons desiring credit for courses in either of these programs must be regularly enrolled in the School of Nursing. Students who have been admitted with Advanced Standing to the School of Nursing and who may wish to make up deficiencies in the Summer Session must have courses approved by the School of Nursing. Information about required courses is published in the regular Bulletin of the School of Nursing. For further information write to the Dean of the School of Nursing, Hanes House, Duke University, Durham, North Carolina.

Divinity School Studies



BACHELOR OF DIVINITY AND MASTER OF RELIGIOUS EDUCATION: The degrees of Bachelor of Divinity and Master of Religious Education are administered by the faculty of the Divinity School. A limited number of courses carrying credits toward these degrees is listed in this *Bulletin* under the heading of Religion. Persons desiring credit toward either of these degrees must be regularly admitted to the Divinity School, and all courses listed for Divinity School credit must be registered and approved in the office of the Divinity School. This school publishes its own Summer Session Bulletin, a copy of which may be secured by addressing The Office of the Dean, The Divinity School, Duke Station, Durham, North Carolina.

WEST CAMPUS DUKE UNIVERSITY



CLASSROOM ASSIGNMENTS

On registration days all students should consult the *Sun Dial* for room assignments for all classes and for changes in the course program announced in this *Bulletin*.

Courses of Instruction



Minimum Enrollment Required for Courses

ALL courses are offered subject to minimum enrollments. The University reserves the right to withdraw undergraduate courses in which fewer than twelve students enroll, senior-graduate courses numbered 200-299 in which fewer than ten students enroll, and graduate courses and seminars numbered 300 or above in which fewer than six students enroll. In withdrawing a course, the University attempts to avoid undue hardships on students. Sometimes, therefore, courses are offered in spite of small enrollments. Courses not listed will be given when a demand develops and an instructor is available.

Department Officers and Regulations

Departments offering Summer Session programs are listed alphabetically. Under each department is given the name of the chairman and the name of the director of graduate studies. Where departments have set up special regulations for admission to candidacy for the Master's degree, these are included.

BOTANY

PROFESSOR HENRY J. OOSTING, CHAIRMAN—102 BIOLOGY BUILDING (WEST CAMPUS);
PROFESSOR PAUL J. KRAMER, DIRECTOR OF GRADUATE STUDIES—
04 BIOLOGY BUILDING (WEST CAMPUS)

For admission to candidacy for the Master's degree in Botany, students must have completed a minimum of eighteen semester hours of biological science, including six semester hours of botany in courses numbered above 100. Students who have not yet had the minimum eighteen hours, however, may enter higher courses by permission of the instructor, if he is convinced that they can carry the work for undergraduate credit and may count such work toward the eighteen hours necessary for candidacy.

FIRST TERM

S225. SPECIAL PROBLEMS.—Hours to be arranged.	STAFF
S359. RESEARCH.—Hours to be arranged.	STAFF

FIRST TERM (Marine Laboratory, Beaufort, North Carolina)

S207. MARINE MYCOLOGY.—Introduction to the structure, classification culture, and physiology of marine and brackish water fungi. Special problems on groups or individual species. Lectures, laboratory, field trips, introduction to periodical literature, and individual investigations. 6 s.h.

MR. JOHNSON

S225. SPECIAL PROBLEMS.—Hours to be arranged.

MR. JOHNSON

S359. RESEARCH.—Hours to be arranged.

MR. JOHNSON

SECOND TERM

S225. SPECIAL PROBLEMS.—Hours to be arranged.

STAFF

S359. RESEARCH.—Hours to be arranged.

STAFF

SECOND TERM (Duke Marine Laboratory, Beaufort, North Carolina)

S225. SPECIAL PROBLEMS.—Hours to be arranged.

MR. JOHNSON

S359. RESEARCH.—Hours to be arranged.

MR. JOHNSON

CHEMISTRY

PROFESSOR J. H. SAYLOR, CHAIRMAN—115 CHEMISTRY BUILDING (WEST CAMPUS);

PROFESSOR CHARLES K. BRADSHAW, DIRECTOR OF GRADUATE STUDIES—

124 CHEMISTRY BUILDING (WEST CAMPUS)

All classes in Chemistry, Term I, will begin on June 18 and continue through July 16. All classes in Chemistry, Term II, will begin on July 22 and continue through August 16. Students who wish to avoid paying a late registration fee must have their registration completed in advance of these dates. For registration dates see *General Registration* on Page 19 of this *Bulletin*.

FIRST TERM

S1. GENERAL INORGANIC CHEMISTRY.—Lectures, recitations, and laboratory work on the elementary principles of chemistry and on the occurrence, preparation, properties, and uses of the elements and their compounds. Recitation daily, 8:00-9:00; laboratory daily, 9:00-12:00; lecture daily, 12:00-1:00. 4 s.h. MR. BRICE

S61. FUNDAMENTALS OF ANALYTICAL CHEMISTRY.—A study of the relations of electrolytes in solution and of chemical equilibrium illustrated by laboratory experiments involving the techniques of gravimetric, volumetric, and colorimetric analysis. Prerequisites: Chemistry 1-2 and Mathematics 6 or equivalent. Lecture or recitation daily, 8:30-10:00; laboratory daily, 10:30-12:30 and 1:30-4:00. 4 s.h. MR. WILDER

S151. ORGANIC CHEMISTRY.—An introduction to the study of carbon compounds. Compounds of the aliphatic series form the basis of lectures, discussions and laboratory experiments. Prerequisite: Chemistry S61. Recitation daily, 8:00-9:00; laboratory daily, 9:00-12:00; lecture daily, 12:00-1:00. 4 s.h. MISS BROWN

S275. THESIS RESEARCH.—Research in the fields of physical, analytical, inorganic, or organic chemistry. Open to those students whose research programs for the A.M. and Ph.D. degrees have been approved by the department and by one of the instructors in charge of the course. Schedule to be arranged. (Not more than one semester hour of credit per week for full-time schedule or one semester hour each two weeks for half-time schedule.) 2 to 8 s.h. Available Term I and II. STAFF

SECOND TERM

S2. GENERAL INORGANIC CHEMISTRY.—A continuation of S1. Prerequisite: Chemistry S1. Recitation daily, 8:00-9:00; laboratory daily, 9:00-12:00; lecture daily, 12:00-1:00. 4 s.h. MR. HAMRICK

S152. ORGANIC CHEMISTRY.—A study of compounds of the aromatic series and of carbohydrates and proteins. Prerequisite: Chemistry S151. Recitation daily, 8:00-9:00; laboratory daily, 9:00-12:00; lecture daily, 12:00-1:00. 4 s.h. MR. VINGIELLO

ECONOMICS

PROFESSOR CALVIN B. HOOVER, CHAIRMAN; ASSOCIATE PROFESSOR LLOYD SAVILLE, ACTING EXECUTIVE OFFICER OF THE DEPARTMENT—203H SOCIAL SCIENCE BUILDING (WEST CAMPUS); PROFESSOR ROBERT S. SMITH, ACTING DIRECTOR OF GRADUATE STUDIES
203E SOCIAL SCIENCE BUILDING (WEST CAMPUS)

FIRST TERM

S51. PRINCIPLES OF ECONOMICS.—A course in the essential principles of economic science. (This course will not count as a part of the minimum economics

requirements for graduation until the equivalent of S52 has been completed. Credit for Ec. S51 will not be given until Ec. 52 has been completed.) 11:00-12:20. 3 s.h.

MR. SAVILLE

S57. PRINCIPLES OF ACCOUNTING.—Elementary principles of single proprietorship, partnership, and corporation accounting. June 12-June 29. 7:40-12:20. 3 s.h.

MR. SHIELDS

S58. PRINCIPLES OF ACCOUNTING.—A continuation of Economics S57. July 1-July 17. 7:40-12:20. 3 s.h.

MR. SHIELDS

S153. MONEY, CREDIT AND BANKING.—This course begins with a study of the nature, characteristics, and functions of money, credit, and the commercial banking system. It covers also the history of commercial banking in the United States; the foundation, organization, and functions of the Federal Reserve System; the supervision and control of commercial banks; deposit insurance; and the value of money. 7:40-9:00. 3 s.h.

MR. SAVILLE

S171. ADVANCED ACCOUNTING.—Advanced accounting theory and practice applied to the managerial problems of valuation and operation in corporations, consolidations, mergers, and liquidations. Open to students who have completed Accounting 57-58. June 12-June 29. 7:40-12:20. 3 s.h.

MR. BLACK

S172. ADVANCED ACCOUNTING.—A continuation of Economics S171. July 1-July 17. 7:40-12:20. 3 s.h.

MR. BLACK

S186. LATIN-AMERICAN ECONOMICS.—Facts and factors in the economic structure and growth of the Latin-American nations; population, labor productivity, and standards of living; problems of industry, agriculture, and mining; transportation and public utilities; monetary and fiscal policies; the migration of capital; economic thought and institutions. 11:00-12:20. 3 s.h.

MR. SMITH

S232. THE ECONOMIC HISTORY OF THE UNITED STATES.—A study of the agricultural, industrial, commercial, and financial progress of the United States from colonial times to the present day. 9:20-10:40. 3 s.h.

MR. SMITH

S318X. THESIS SEMINAR.—Hours to be arranged.

MR. SMITH

SECOND TERM

S52. PRINCIPLES OF ECONOMICS.—A continuation of Economics S51. 11:00-12:20. 3 s.h.

MR. LONDON

S105. INDUSTRIAL MANAGEMENT.—This course deals primarily with the elements and problems of managing the operations of an industrial firm. Topics treated include the functions and responsibilities of management, qualities required in executives, organization, location, the physical plant, materials control, the planning and control of operations, industrial and market research, personnel, budgeting, purchasing, and records and reports. 7:40-9:00. 3 s.h.

MR. LONDON

S143. CORPORATION FINANCE.—Principles and problems in the financial organization of corporations; the study of corporate securities, the management of capital, the distribution of earnings; industrial combinations; insolvency and reorganization. (Though not a prerequisite, Economics 57-58, Principles of Accounting, or Economics 60, General Accounting, are recommended to students electing this course.) 9:20-10:40. 3 s.h.

MR. JOERG

S155. LABOR PROBLEMS.—An examination of present-day labor problems followed by an intensive study of methods used by employers and workers in meeting those problems. 11:00-12:20. 3 s.h.

MR. CARTIER

S181. BUSINESS LAW.—The fundamental principles of law as applied to routine business transactions. The topics presented are: contracts, negotiable instruments, forms of business organizations. 7:40-9:00. 3 s.h.

MR. JOERG

S257. DYNAMICS OF THE LABOR MOVEMENT.—A study of the forces which have shaped the growth of the labor movement. Special emphasis on the origin of

modern trade unionism, relating its growth with Western philosophic developments, and with the changing economic and social structure of society in Europe and America. 9:20-10:40. 3 s.h. Mr. CARTTER

S318X. THESIS SEMINAR.—Hours to be arranged.

MESSRS. LONDON AND CARTTER

EDUCATION

PROFESSOR WILLIAM H. CARTWRIGHT, CHAIRMAN—08D WEST DUKE BUILDING (EAST CAMPUS); PROFESSOR EDWARD C. BOLMEIER, DIRECTOR OF GRADUATE STUDIES—06B WEST DUKE BUILDING (EAST CAMPUS)

For admission to candidacy for the Master of Arts (A.M.) degree with major in Education, or for the Master of Education (M.Ed.) degree, students must, in addition to meeting the general requirements for admission to the Graduate School, meet the following specific requirements: Credit for (1) eighteen semester hours of acceptable prior work in Education and (2) twelve semester hours of acceptable prior work in a minor field. If Psychology, Sociology, Economics, or Political Science is chosen for the minor, six semester hours of work completed after entering the Junior year in college will be accepted.

The degree of Master of Arts is available in the divisions of School Administration and Supervision, Secondary Education, Elementary Education, and Guidance and Counseling. Every candidate for the Master of Arts degree in the Department should elect at least twelve semester hours in one of these divisions in which he plans to write his thesis and the remainder of his work, including the six semester hours in his minor, with the approval of the proper division adviser. The degree of Master of Education is available in the divisions of School Administration and Supervision, Secondary Education and Elementary Education. Mr. Bolmeier, Mr. Hurlburt, and Mr. Stumpf are advisers to students in School Administration and Supervision; Mr. Carr, Mr. Petty, and Miss Rudisill are advisers in Elementary Education; Mr. Bolmeier, Mr. Cartwright, and Mr. McLendon are advisers in Secondary Education; and Mr. Colver, Mr. Gehman, and Mr. Weitz are advisers in Guidance and Counseling. Mr. Cartwright and Mr. McLendon are advisers for the Master of Arts in Teaching program. Candidates for the Master of Arts, Master of Education, or Master of Arts in Teaching degree should read with special care the regulations of the Graduate School as set forth on pages 34-38. Candidates for the Master of Arts in the field of guidance should consult the special brochure on guidance available from the Dean of the Graduate School.

It is the intention of the Department to make available to degree candidates all courses ordinarily required for certification as graduate teachers, counselors, principals, and superintendents. These courses will normally be offered at least once every three years.

SHORT-TERM COURSES

(The following four courses will be offered in succession during periods indicated. Each will carry three semester hours of credit and will normally constitute a full load of work. See page 19 for information concerning how to register for courses meeting other than for regular term.)

S230. THE JUNIOR HIGH SCHOOL CURRICULUM.—Principles and practices of curriculum development for adolescent Americans in our schools. Current trends and emerging needs within our cultural context will be stressed. June 11-June 29. 9:20-10:40 and 11:00-12:20. 3 s.h. Mr. AUSTIN

S266. SCIENCE IN THE ELEMENTARY SCHOOL.—Presentation of basic concepts in natural and physical science through selected readings, the use of simple experiments and demonstrations, construction and use of equipment, and field studies. June 11-June 29. 9:20-10:40 and 11:00-12:20. 3 s.h. Miss PHILPOTT

S203. PRINCIPLES OF SCHOOL ADMINISTRATION.—The fundamental facts and procedures of school administration, an analysis of the problems and policies of the organization and direction of a local school system, and the functions of the

various school officials. Prerequisites: Education 103 and 88, or six semester hours of equivalent work in education. July 1-July 17. 9:20-10:40 and 11:00-12:20. 3 s.h.

MR. HURLBURT

S222. THE CURRICULUM AND MATERIALS OF THE ELEMENTARY GRADES.—A study of curriculum problems in the elementary schools. July 19-August 6. 9:20-10:40 and 11:00-12:20. 3 s.h.

MR. HURLBURT

FIRST TERM

S88. EDUCATIONAL PSYCHOLOGY: LEARNING AND MEASUREMENT.—This course and Education 118 constitute a general introduction to the field of Educational Psychology. This course deals with (1) the psychology of learning, including: the nature of the learning process, general principles or laws of learning, the course of learning and forgetting, factors influencing efficiency in learning and retention and the transfer of training; and (2) measurement, including: the basic concepts in the measurement of intelligence, standardized achievement tests, the extent and significance of individual differences in ability and performance. Opportunity will be afforded for examination and study of a variety of tests of intelligence and achievement.

S88.1. 7:40-9:00. 3 s.h.

MR. CHILDS

S88.2. 9:20-10:40. 3 s.h.

MR. COLVER

S201. TEACHING AND SUPERVISION OF ARITHMETIC.—This course gives special attention to the number system, the fundamental operations (with whole numbers, fractions, and decimals), percentage and measurements. The course will consider the meaning theory, methods of teaching, problem solving, evaluation, practice and drill, and selection and gradation of arithmetical contents. The course is designed for teachers and supervisors in the elementary school. 7:40-9:00. 3 s.h.

MR. PETTY

S205. CURRICULUM PROBLEMS IN SECONDARY EDUCATION.—A consideration of the aims and objectives of secondary-school subjects, emphasizing practical problems of curriculum-making in the high school. 9:20-10:40. 3 s.h.

MR. CHILDS

S211. THE PROBLEM CHILD (also Psychology S211).—Study of problem behavior and adjustment in children with emphasis on the causes and treatment of conduct and neurotic disorders of the maladjusted child. Particular attention will be paid to mental hygiene principles in the handling of problem children in school and home. 11:00-12:20. 3 s.h.

MR. BORSTELMANN

(See also Psychology S232, PERSONALITY AND PHYSICAL HANDICAP, p. 56.)

S217. THE PSYCHOLOGICAL PRINCIPLES OF EDUCATION.—An advanced study of teaching, learning, and the learner. Selected problems guiding the reading of students will be discussed in class. Open to graduate students only. 9:20-10:40. 3 s.h.

MR. WEITZ

S224. TEACHING THE SOCIAL STUDIES IN ELEMENTARY SCHOOLS.—This course will treat objectives, curriculum trends, methods, and materials in elementary-school social studies. Topics to receive emphasis include unit-planning, use of the textbook, the reading program, using community resources, audio-visual materials, dealing with controversial issues, teaching time and place concepts, and evaluation. Opportunity will be provided for teachers to work on their own school problems in the social studies. 9:20-10:40. 3 s.h.

MR. CARTWRIGHT

S234. SECONDARY-SCHOOL ORGANIZATION AND ADMINISTRATION.—This course is designed especially for principals, teachers, and other prospective members of the secondary-school staff. The scope of secondary education is considered to encompass junior high school, regular high school, senior high, and junior college. Special treatment is given to the problems of internal organization and management. 7:40-9:00. 3 s.h.

MR. BOLMEIER

S235. THE NATURE, FUNCTION, AND REORGANIZATION OF THE CURRICULUM.—Selected problems guiding the reading of students. Open to graduate students only. 7:40-9:00. 3 s.h. MR. CARTWRIGHT

S239. METHODS AND PROBLEMS OF TEACHING ENGLISH IN SECONDARY SCHOOLS.—This course will present methods of teaching the reading of literature and other forms of writing, language, grammar and composition. Materials will include selections found in widely adopted textbooks, numerous specimen themes for grading, and current books and articles in the field. Several short compositions and a report will be required. 11:00-12:20. 3 s.h. MR. BOWMAN

S240. EDUCATIONAL AND OCCUPATIONAL INFORMATION.—A study of the sources of occupational and educational information; methods of securing and organizing occupational information; methods of providing vocational and educational information to students through career days, college conferences, class activities, and individual counseling; methods of making job analyses and community occupational surveys. 7:40-9:00. 3 s.h. MR. COLVER

S253. SCHOOL LAW.—The primary purpose of this course is to familiarize school administrators and teachers with the legal features of school organization and administration. Although some attention is given to constitutional and statutory provisions, the main emphasis is upon court decisions relating to education. Students are expected to select appropriate problems in school law for intensive study. 9:20-10:40. 3 s.h. MR. BOLMEIER

S258. EDUCATIONAL MEASUREMENTS.—A critical study of the principles and techniques involved in measurement in education, with opportunity for individual research. Prerequisite: twelve semester hours in the Department, including a course in educational psychology. 11:00-12:20. 3 s.h. MR. WEITZ

SECOND TERM

S118. EDUCATIONAL PSYCHOLOGY: PSYCHOLOGICAL DEVELOPMENT.—This course traces the psychological development of the individual from infancy to maturity. The principal topics considered are: the interdependence of hereditary and environmental factors in development, the nature of the developmental process, the establishment of the early basic patterns of behavior, changes and conditions producing these changes throughout childhood and adolescence to maturity, and the origin and treatment of minor behavior disorders. Not open to students who have had Psychology 121 or 126. Prerequisite: three semester hours in psychology or educational psychology. 7:40-9:00. 3 s.h. MR. NANIA

S204. THE SCHOOL AS AN INSTITUTION.—The place of the school in society, its history and philosophy. Selected problems guiding the reading of students will be discussed in class. Open to graduate students only. 9:20-10:40. 3 s.h. MR. MCLENDON

S210. INTRODUCTION TO EDUCATIONAL RESEARCH.—The general purpose of this course is to give the student an overview of research, acquaint him with the nature of research processes, and develop within him an appreciation of the essential characteristics of good research. Open to graduate students only. 11:00-12:20. 3 s.h. MR. STUMPF

S226. TEACHING READING IN THE ELEMENTARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to developmental and remedial programs. 11:00-12:20. 3 s.h. MISS RUDISILL

S228. IMPROVEMENT OF INSTRUCTION IN THE SOCIAL STUDIES.—An advanced treatment of curriculum, methods, and materials in the social studies. Individuals will concentrate on subjects and grade levels of their choice. 7:40-9:00. 3 s.h. MR. MCLENDON

S236. TEACHING READING IN THE SECONDARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to develop-

mental and remedial programs. The course provides practice with secondary-school children suffering reading retardation, including testing, diagnosis, and daily remedial teaching during a six-week period. For secondary-school teachers of all subjects who wish to improve the reading and study habits of their students. 9:20-10:40. 3 s.h. MISS RUDISILL

S243. PERSONALITY DYNAMICS.—A study of personality structure and dynamics with emphasis upon the implications for counseling and instruction. Prerequisite: 6 hours of psychology or educational psychology. 7:40-9:00. 3 s.h. MR. GEHMAN

S244. COUNSELING TECHNIQUES.—A study of individual counseling techniques including diagnosis, interviewing, program planning, and counseling evaluation. Prerequisite: Education 242 and 243 or equivalent, which may be taken concurrently. 9:20-10:40. 3 s.h. MR. GEHMAN

S323. PUBLIC SCHOOL FINANCE.—A study of educational costs, sources of revenue for the support of public education, collection of revenue, basis of distribution, and accounting for funds spent. 7:40-9:00. 3 s.h. MR. STUMPF

NURSING EDUCATION

A DIVISION OF THE DEPARTMENT OF EDUCATION

MISS THELMA INGLES, M.A., DIRECTOR OF THE DIVISION OF NURSING EDUCATION—HANES HOUSE (WEST CAMPUS) (ON LEAVE UNTIL JULY, 1957); MRS. ERLINA GOLDSMITH, M. L. (ACTING DIRECTOR UNTIL JULY, 1957)—HANES HOUSE (WEST CAMPUS)

FIRST TERM

S116N. NURSING EDUCATION: PRINCIPLES AND PRACTICES.—The second half of Nursing Education 115N-116N, a continuation of the principles of teaching applied to the nursing school situations and the planning and evaluation of instruction. Prerequisite: 115N. Hours to be arranged. 4 s.h. Miss JACOBANSKY

S120N. NURSING EDUCATION: PROBLEMS IN NURSING CARE.—Each student works on an individual problem designed to improve the nursing care of patients. Prerequisites: 131 N and 132 N. Hours to be arranged. 3 s.h. MRS. GOLDSMITH

SECOND TERM

S136N. SEMINAR IN MEDICAL OR SURGICAL SPECIALTY.—Directed study in a medical or surgical specialty. Each student works on a problem of major interest to her—such as care of the patient with cancer or care of the patient with heart disease. Individual research in the collection of original material. Prerequisites: 134N and 135N. Hours to be arranged. 3 s.h. MISS INGLES

ENGINEERING

PROFESSOR WALTER J. SEELEY, DEAN OF THE COLLEGE OF ENGINEERING
135 ENGINEERING BUILDING (WEST CAMPUS)

FIRST TERM

C.E. S110. PLANE SURVEYING.—Use of instruments; transit, stadia, and compass surveying; determination of meridian by observation on Polaris; differential and profile leveling; setting grade stakes; calculation of bearings, latitudes, departures and areas; methods of plotting; survey and plot of portions of campus by stadia, and transit and tape; care and adjustment of instruments. Prerequisites: trigonometry; engineering drawing desirable. (Four weeks, eight hours a day.) Instruction begins on June 12 and continues through July 9. 8:00-12:00, 1:00-5:00. 4 s.h. (See Forestry.) MR. ARCTIS

ENGLISH

PROFESSOR CHARLES E. WARD, CHAIRMAN—323 ALLEN BUILDING (WEST CAMPUS)

PROFESSOR BENJAMIN BOYCE, DIRECTOR OF GRADUATE STUDIES—
401 ALLEN BUILDING (WEST CAMPUS)

Candidates for the Master's degree in English are expected to have had at least twelve semester hours in undergraduate courses above the Sophomore level. The Department may also require additional courses if the work of the student in his first term indicates inadequate preparation.

FIRST TERM

S1. ENGLISH COMPOSITION.—A course in the fundamentals of English Composition, oral and written, with special attention to sentence structure, syntax, common errors, etc. Frequent themes. 11:00-12:20. 3 s.h. MR. KOTTLER

S2. ENGLISH COMPOSITION.—A continuation of course S1. 9:20-10:40. 3 s.h. MR. KOTTLER

S55. REPRESENTATIVE WRITERS.—Chaucer's Prologue to *The Canterbury Tales* and at least two tales, Shakespeare's *1 Henry IV* and *King Lear* and one other play, John Donne's poems, Milton's *Paradise Lost* (selections) and some of the shorter poems. 9:20-10:40. 3 s.h. MR. FISHER

S124. SHAKESPEARE.—Ten plays after 1600. Occasional tests and one or two papers. 9:20-10:40. 3 s.h. MR. BOWMAN

S207. HISTORY OF THE ENGLISH LANGUAGE.—A survey of the language from Old to Present English, taking into consideration developments in phonology, morphology, syntax, and vocabulary. 7:40-9:00. 3 s.h. MR. FISHER

S233. AMERICAN LITERATURE, 1870-1900.—Selected works of the Chief authors of the period, including Whitman, Lanier, Mark Twain, James, Howells, Crane, and Emily Dickinson. The lectures will deal with the social background as well as the literary trends and the careers of the major authors. 9:20-10:40. 3 s.h. MR. GOHDES

S251. ENGLISH LITERATURE OF THE FIRST HALF OF THE 17TH CENTURY.—A survey of poetry and prose, with special emphasis on John Donne and the metaphysical poets. 11:00-12:20. 3 s.h. MR. WARD

S308X. SEMINAR IN AMERICAN LITERATURE.—For students writing theses in American Literature. Hours and credits to be arranged. MR. GOHDES

S350X. SEMINAR IN ENGLISH LITERATURE.—For students writing theses in English literature. Hours and credits to be arranged. MR. WARD

SECOND TERM

S2. ENGLISH COMPOSITION.—A continuation of course S1. 11:00-12:20. 3 s.h. MR. ANDERSON

S56. REPRESENTATIVE WRITERS.—Pope's *Poems* (selections), Fielding's *Joseph Andrews*, Keats's *Poems and Letters*, Arnold's *Selected Poetry and Prose*, Dickens's *Bleak House*, Yeats's *Collected Poems*, Shaw's *Saint Joan*, and a twentieth-century novel. 9:20-10:40. 3 s.h. MR. SANDERS

S166. AMERICAN FICTION.—A survey of the American novel and short story in the present century, centered around ten representative books. Lectures, discussions, and frequent quizzes. 9:20-10:40. 3 s.h. MR. BUDD

S221. ENGLISH LITERATURE OF THE EARLY NINETEENTH CENTURY.—The British Romantic poets and prose writers from Scott to the early Carlyle, with special attention to Wordsworth, Coleridge, and Keats. 7:40-9:00. 3 s.h. MR. SANDERS

S229. AMERICAN LITERATURE, 1800-1870.—The New England writers, with special emphasis on Emerson, Thoreau, and Hawthorne. 9:20-10:40. 3 s.h. MR. TURNER

S274. AMERICAN HUMOR.—The development of the native tradition in the Down-East humorists and the humorists of the Old Southwest. Extensive reading in Mark Twain and his contemporaries, and some attention to the continuation of the tradition after Mark Twain. 11:00-12:20. 3 s.h. MR. TURNER

FORESTRY

PROFESSOR CLARENCE F. KORSTIAN, DEAN OF THE SCHOOL OF FORESTRY AND DIRECTOR OF GRADUATE STUDIES—308 SOCIAL SCIENCE BUILDING (WEST CAMPUS)

Organized course work in the School of Forestry during the Summer Session is limited to plane surveying, forest surveying, tree identification, and forest mensuration which are required of all students entering upon two years of study in technical forestry leading to the degree of Master of Forestry (M.F.)

Qualified students may engage in thesis research in certain branches of forestry during the Summer Session with the approval of the instructor concerned and the Dean of the School of Forestry or of the Director of Graduate Studies in the case of work taken through the Graduate School.

C.E.S110. PLANE SURVEYING.—Use of instruments; transit, stadia, and compass surveying; determination of meridian by observation on Polaris; differential and profile leveling; setting grade stakes; calculation of bearings, latitudes, departures and areas; methods of plotting; survey and plot of portions of campus by stadia, and transit and tape; care and adjustment of instruments. Prerequisites: trigonometry; engineering drawing desirable. (Four weeks, eight hours a day.) Instruction begins on June 12 and continues through July 9. 4 s.h. MR. ARGES

S149. FOREST TREE IDENTIFICATION.—Field studies leading to the identification of trees and principal shrubs indigenous to the Piedmont and coastal plain forests of the Southeastern United States. (One week, eight hours a day.) July 10-July 16. 1 s.h. MR. HARRAR

S150. FOREST SURVEYING AND AERIAL PHOTO INTERPRETATION.—Application of plane surveying to forest problems; practice in making boundary, topographic and cover type surveys; details of land ownership and transfer, title search, and deed descriptions. The last two weeks will be spent in the study of the principles of aerial photogrammetry and photo interpretation, and may be taken separately for two hours of credit. Prerequisites: Civil Engineering S110, Plane Surveying; Forestry S149, Forest Tree Identification, or equivalents. (Four weeks, eight hours a day.) July 17-August 13. 4 s.h. MR. CHAIKEN

S151. FOREST MENSURATION.—Field studies in methods of measuring content and growth of trees and forest stands; practice in timber estimating, log scaling, use of mensurational instruments, and collection of basic data. (Four weeks, eight hours a day.) August 14-September 10. 4 s.h. MR. SCHUMACHER

S230. INSECT ENEMIES AND DISEASES OF SOUTHERN FORESTS.—Identification and control of injurious forest insects and diseases occurring in the South. Time to be arranged. Minimum enrollment 10. 1 s.h. or may be taken without credit. MESSRS. ANDERSON, JOHNSON

S357. RESEARCH IN FORESTRY.—Open to students whose research programs for the M.F. or D.F. degree have been approved by the Dean of the School of Forestry and the instructor responsible for directing the research and whose programs for the A.M. or Ph.D. degree have been approved by the Director of Graduate Studies and the instructor in charge. (Credits and schedule to be arranged.) June 12-August 24. 2 to 12 s.h. (Not more than one semester hour of credit per week for full time schedule or one semester hour each two weeks for half-time schedule.) (Consult courses 301-302 in Announcement of School of Forestry for letter designation of branches of forestry in which research is to be conducted.) STAFF

GEOLOGY

PROFESSOR E. WILLARD BERRY, CHAIRMAN—019 SCIENCE (EAST CAMPUS)

The class in Geology, Term I, will begin on June 18 and continue through July 16. The class in Geology, Term II, will begin on July 22 and continue through August 16. Students who wish to avoid paying a late registration fee must have their registration completed in advance of these dates. For registration dates see *General Registration* on page 19 of this *Bulletin*.

FIRST TERM

S51. GENERAL GEOLOGY.—This course is designed to give a general view of the surface features of the earth, their origin, structure, and materials. Illustrative materials are studied in the laboratory. Excursions may be made to neighboring points where principles of the science are studied in the field. Lectures or recitations, 8:00-11:00 daily; laboratory 2:00-5:00, Monday through Thursday. June 18-July 16. 4 s.h. Mr. FURBISH

SECOND TERM

S52. GENERAL GEOLOGY.—This course is designed to give some knowledge of the chief events of the earth's history. Excursions may be made to suitable neighboring localities. Lectures or recitations, 8:00-11:00 daily; laboratory 2:00-5:00, Monday through Thursday. July 22-August 16. 4 s.h. Mr. FURBISH

GERMAN

PROFESSOR HERMAN SALINGER, CHAIRMAN—301B GRAY BUILDING (WEST CAMPUS)

The work in German S1, S2, S3 and S4 will be coordinated with listening and oral practice in the Language Laboratory which students in German classes will be privileged to attend. Attendance in the Laboratory is not compulsory but is very strongly advised by the Staff.

FIRST TERM

S1. ELEMENTARY GERMAN.—The fundamentals of grammar and pronunciation; vocabulary drill, translation, and dictation. Emphasis upon a sound reading knowledge and individual achievement. June 11 to June 29. 9:20-10:40 and 1:40-3:00. 3 s.h. Mr. WILSON

S2. ELEMENTARY GERMAN.—The equivalent of the second college semester of German; intensive reading of graded material; grammar and vocabulary drill; dictation and sight translation. July 1 to July 17. 9:20-10:40 and 1:40-3:00. 3 s.h. Mr. WILSON

S3. INTERMEDIATE GERMAN.—Grammar review and composition; reading of short stories, novels and poems. Prerequisite: German 1-2, or two units of high school German. June 11 to July 17. 9:20-10:40. 3 s.h. Mr. TARABA

S4. INTERMEDIATE GERMAN.—Continuation of German S3. Prerequisite: German 3 (or S3, which may be taken concurrently). June 11-July 17. 11:00-12:20. 3 s.h. Mr. TARABA

GREEK

ASSOCIATE PROFESSOR JAMES N. TRUESDALE, CHAIRMAN—123 ALLEN BUILDING (WEST CAMPUS)

FIRST TERM

S121. GREEK LITERATURE: HOMER.—*Iliad and Odyssey*. The purpose of this course is to give a general survey of the life and civilization of the Greeks especially to those who have never studied the language but wish to become acquainted with some of the choicest portions of the literature by the use of translations. The *Iliad* and the *Odyssey* are read in translation, and the excavations and discoveries at Troy and other cities of the Aegean age are discussed.

MESSRS. TRUESDALE, ROSE

S121.1 7:40-9:00. 3 s.h.

S121.2 7:40-9:00. 3 s.h.

S122. GREEK LITERATURE: THE TRAGIC POETS.—The purpose of this course is similar to that of course S121. Many of the extant plays of Aeschylus, Sophocles, and Euripides are studied in English translations. 9:20-10:40. 3 s.h.

Mr. TRUESDALE

HEALTH AND PHYSICAL EDUCATION

E. M. CAMERON, DIRECTOR, TRINITY COLLEGE AND COLLEGE OF ENGINEERING—
109 GYMNASIUM (WEST CAMPUS)

FIRST TERM

PE S57. VOLLEYBALL-TENNIS.—Gymnasium. Hours to be arranged. 1 s.h.
(M) Mr. COBB

PE S132. SCHOOL HEALTH PROBLEMS.—A course designed (a) to familiarize the teacher with school health problems such as physical screening, communicable disease prevention and control, healthful school environment; (b) to present methods and materials for health teaching in elementary and secondary schools. 9:20-10:40. 3 s.h.

Mr. AYCOCK

PE S190. PROTECTIVE PRACTICES IN PHYSICAL EDUCATION.—Training and conditioning of athletic teams and the prevention, diagnosis, and treatment of athletic injuries. Gymnasium. 1:40-3:00. 3 s.h.

Mr. MONTFORT

HISTORY

PROFESSOR E. MALCOLM CARROLL, CHAIRMAN—235 ALLEN BUILDING (WEST CAMPUS);
PROFESSOR ROBERT H. WOODY, DIRECTOR OF GRADUATE STUDIES—
234 ALLEN BUILDING (WEST CAMPUS)

For admission to candidacy for a Master's degree in History the student must present a total of eighteen semester hours of prior work in History, of which at least six must be in American History if he plans to take his major work in that field. Before enrolling for thesis supervision, candidates for the Master's degree are required to complete at least three semester hours of seminar work and are strongly urged to enroll for this work in the second term of their attendance in the Summer Session. (See courses numbered 300 or above.)

FIRST TERM

S51. HISTORICAL BACKGROUND OF THE WORLD TODAY 1500-1851.—The central fact of the expansion of Europe underlies the content of the course. The chief themes are: the contest between liberty and authority in the modern state, changing economic theory and organization, and the problems of peace and war among the states, including the Western infiltration of Asia, Latin America, and Africa, and the rise of the United States as a world power. 9:20-10:40. 3 s.h.

Mr. YOUNG

S91. THE DEVELOPMENT OF AMERICAN DEMOCRACY TO 1865.—This course is a study of trends vital to an understanding of the United States today. The main theme is the development of American democracy. Problems of foreign policy, the growth of capitalism, political practices, social behavior, and conflicting ideals are considered in relation to this main theme. 7:40-9:00. 3 s.h.

Mr. DeCONDE

S122. AMERICAN DIPLOMACY IN THE TWENTIETH CENTURY.—This course deals with ideas and problems in American foreign policy and with the role of the United States in world affairs. It begins with the Spanish American War and ends with the foreign policy problems of the Eisenhower administration. 11:00-12:20. 3 s.h.

Mr. DeCONDE

S229. RECENT INTERPRETATIONS OF MODERN EUROPEAN HISTORY.—A course designed to develop the ability to appraise critical historical issues through the study and discussion of recent interpretations of key historical problems in Modern European History. The topics selected will vary with the needs of the class, but will include such classic controversies as the nature of the Industrial Revolution, the origins of World War I, and the Russian Revolution. 9:20-10:40. 3 s.h. MR. COLTON

S255. THE EMERGENCE OF THE NEW SOUTH, 1865 TO THE PRESENT.—The course deals with such subjects as the impact of Reconstruction; industrialization and immigration; the agrarian revolt of the 1890's; the changing status of the Negro; the South's role in two World Wars and in the reform movements headed by Theodore Roosevelt, Woodrow Wilson and Franklin D. Roosevelt. Wherever possible, examples will be drawn from the South Atlantic states. 7:40-9:00. 3 s.h. MR. DURDEN

S301. SEMINAR IN HISTORICAL RESEARCH.—1:40-3:00 or at an hour to be arranged. 3 s.h. MR. WATSON

SECOND TERM

S52. HISTORICAL BACKGROUND OF THE WORLD TODAY 1851-1956.—A continuation of History S51. 9:20-10:40. 3 s.h. MR. FERGUSON

S92. THE DEVELOPMENT OF AMERICAN DEMOCRACY, 1865 TO THE PRESENT.—The emphasis is on the emergence of contemporary problems. 7:40-9:00. 3 s.h. MR. STEVENS

S209. POLITICAL INSTITUTIONS OF THE UNITED STATES 1760-1848.—The evolution of the principal institutions of the government of the United States, related to their setting in a changing society. Topics include the colonial heritage; the basic problems in forming the Constitution and major controversies surrounding its interpretation; the origins of national political parties. 9:20-10:40. 3 s.h. MR. STEVENS

S302. SEMINAR IN HISTORICAL RESEARCH.—1:40-3:00 or at an hour to be arranged. 3 s.h. MR. FERGUSON

LATIN AND ROMAN STUDIES

PROFESSOR ROBERT S. ROGERS, CHAIRMAN—204 CARR BUILDING (EAST CAMPUS)

FIRST TERM

S111. ROMAN LITERATURE IN ENGLISH TRANSLATION.—Selected readings of Latin literature in English translation with emphasis on the drama, lyric poetry, and the varied contributions of Cicero to literature. 9:20-10:40. 3 s.h. MR. ROSE

MATHEMATICS

PROFESSOR J. J. GERGEN, CHAIRMAN—134 PHYSICS BUILDING (WEST CAMPUS); PROFESSOR J. H. ROBERTS, DIRECTOR OF GRADUATE STUDIES—230 PHYSICS BUILDING (WEST CAMPUS)

Graduate students are invited to consult with the Director of Graduate Studies concerning their programs.

FIRST TERM

S5. COLLEGE ALGEBRA.—Advanced topics in quadratic equations, systems involving quadratics, variation, binomial theorem, progressions, inequalities, theory of equations, determinants, partial fractions, probability. This course and Mathematics S6 may be taken concurrently. Prerequisite: Mathematics I, or one and one-half units in algebra and one unit in geometry. 7:40-9:00 3 s.h. MR. CARLITZ

S6. PLANE TRIGONOMETRY.—Logarithms, right and oblique triangles, radian measure, graphs of trigonometric functions, inverse trigonometric functions, trigonometric identities and equations. Prerequisite: Must be preceded or accompanied by Mathematics 5. 9:20-10:40. 3 s.h. MR. THOMAS

S224. MATHEMATICAL STATISTICS.—Representation of data, averages, measures of dispersion, comparison of distributions, correlation, probability functions, normal curve and generalizations, sampling. This is a basic first course in statistics. Prerequisite: Calculus. 9:20-10:40. 3 s.h. MR. CARLITZ

S284. VECTOR ANALYSIS.—Vectors in three-dimensional Euclidean space with applications to physics; introduction to matrix algebra and tensor analysis. Prerequisite: integral calculus. 7:40-9:00. 3 s.h. MR. THOMAS

S389X. THESIS SEMINAR.—Supervision of individual theses in algebra, analysis and geometry. Students should consult with the Director of Graduate Studies before registering. Thesis credit only. Hours to be arranged.

MESSRS. CARLITZ AND THOMAS

SECOND TERM

S50. PLANE ANALYTIC GEOMETRY.—Rectangular and polar coordinates, loci, straight lines, conic sections. This course and Mathematics S51 may be taken concurrently. Prerequisites: Mathematics 5 and 6. 7:40-9:00 3 s.h. MR. ELLIOTT

S51. CALCULUS I.—Differentiation of elementary functions, curve tracing, maxima and minima, motion, curvature, indeterminate forms. Prerequisite: Must be preceded or accompanied by Mathematics 50. 9:20-10:40. 3 s.h. MR. ELLIOTT

PHILOSOPHY

PROFESSOR CHARLES A. BAYLIS, CHAIRMAN—212 WEST DUKE BUILDING (EAST CAMPUS);

PROFESSOR BERNARD PEACH, DIRECTOR OF GRADUATE STUDIES—

212 WEST DUKE BUILDING (EAST CAMPUS)

FIRST TERM

S48. LOGIC.—A study of the conditions of effective thinking and clear communication, and of typical sources of fallacies. Examination of the basic principles of deductive reasoning (making explicit the implications of statements) and of inductive reasoning (the formulation and testing of hypotheses on the basis of experience and experiment). Emphasis on practical illustrations and applications. 11:00-12:20. 3 s.h. MR. WELSH

S91. INTRODUCTION TO PHILOSOPHY.—A systematic and historical examination of the major problems of knowledge, morals, and metaphysics. 9:20-10:40. 3 s.h. MR. WELSH

SECOND TERM

S91. INTRODUCTION TO PHILOSOPHY.—A systematic and historical examination of the major problems of knowledge, morals, and metaphysics. 11:00-12:20. 3 s.h. MR. BUCK

S93. HISTORY OF PHILOSOPHY: ANCIENT AND MEDIEVAL.—A study of the major philosophers of the period with special reference to the continuity of their thought. 9:20-10:40. 3 s.h. MR. BUCK

PHYSICS

PROFESSOR WALTER M. NIELSEN, CHAIRMAN AND DIRECTOR OF GRADUATE STUDIES—

119 PHYSICS BUILDING (WEST CAMPUS)

Classes in Physics S41, Term I, will begin on June 18 and continue through July 16. Classes in Physics S42, Term II, will begin on July 22 and continue through August 16. Students who wish to avoid paying a late registration fee must have

their registration completed in advance of these dates. For registration dates see *General Registration* on page 19 of this *Bulletin*.

FIRST TERM

S41. GENERAL PHYSICS.—This course treats the basic principles of general physics in a more quantitative manner than Physics 1-2. It meets in a thorough way the physics requirement for entrance into the study of either medicine or engineering, and is well suited for the general science student. This course is not open for credit for students who have completed Physics 1-2. Lecture and recitation daily, 8:30-9:50 and 10:10-11:30; laboratory four days per week, 1:00-4:00. Prerequisites: Mathematics 5-6 or equivalent. 4 s.h. MR. CARPENTER

S353X. THESIS SEMINAR.—Students who are properly qualified may carry on research work under direction. Credits and hours to be arranged. STAFF

SECOND TERM

S42. GENERAL PHYSICS.—A continuation of Physics S41. Prerequisite: Physics S41. Lecture and recitation daily, 8:30-9:50 and 10:10-11:30; laboratory four days per week, 1:00-4:00. 4 s.h. MR. CARPENTER

POLITICAL SCIENCE

PROFESSOR ROBERT S. RANKIN, CHAIRMAN—308 LIBRARY (WEST CAMPUS); PROFESSOR R. R. WILSON, DIRECTOR OF GRADUATE STUDIES—405 NEW LIBRARY TOWER (WEST CAMPUS)

FIRST TERM

S61. THE AMERICAN POLITICAL SYSTEM.—An analysis of the principles and institutions of the national government of the United States. 11:00-12:20. 3 s.h. MR. SIMPSON

S125. AMERICAN POLITICAL PARTIES AND PRACTICAL POLITICS.—A study of the historical development, organization, and methods of political parties in the United States. 9:20-10:40. 3 s.h. MR. SIMPSON

S231. AMERICAN POLITICAL THEORY.—An analysis of the main currents in American political thought from colonial beginnings to the present day, with emphasis upon the development of liberalism in America. 7:40-9:00. 3 s.h. MR. HALLOWELL

SECOND TERM

S62. COMPARATIVE POLITICAL SYSTEMS.—An analysis of the principles and institutions of selected foreign governments, as compared with those of the United States. 11:00-12:20. 3 s.h. MR. LEACH

S123. INTRODUCTION TO POLITICAL PHILOSOPHY.—A course devoted to the reading and discussion of selected political classics including Plato's *Republic*, Aristotle's *Ethics* and *Politics* and other works as time permits. 9:20-10:40. 3 s.h. MR. LEACH

S232. JAPANESE CIVILIZATION.—Analysis of Japanese culture with reference to social and political institutions. Buddhist, Confucian, and Shinto bases of Japanese thought are examined. 9:20-10:40. 3 s.h. MR. BRAIBANTI

S311. SEMINAR IN FAR EASTERN POLITICS.—Open to students who have completed course 211 or its equivalent. 1:40-3:00. 3 s.h. MR. BRAIBANTI

PSYCHOLOGY

PROFESSOR ELIOT H. RODNICK, CHAIRMAN—106 BIVINS BUILDING (EAST CAMPUS)
PROFESSOR KARL ZENER, DIRECTOR OF GRADUATE STUDIES—205
PSYCHOLOGY LABORATORY BUILDING (EAST CAMPUS)

Details concerning the program of studies in Psychology may be obtained from the Director of Graduate Studies in Psychology.

FIRST TERM

S91. **INTRODUCTORY PSYCHOLOGY.**—An introduction to the facts, principles, and problems of normal adult psychology through a study of psychological methods as applied to motivation, emotions, perception, sensation, thinking, memory, learning, individual differences, and personality. 9:20-10:40. 3 s.h. MR. KIMBLE

S211. **THE PROBLEM CHILD** (Also Education S211).—Study of problem behavior and adjustment in children with emphasis on the causes and treatment of conduct and neurotic disorders of the maladjusted child. Particular attention will be paid to mental hygiene principles in the handling of problem children in school and home. 11:00-12:20. 3 s.h. MR. BORSTELMANN

S232. **PERSONALITY AND PHYSICAL HANDICAP.**—Survey of the psychological factors underlying adjustment to physical disabilities, with particular stress upon personality, emotional and social attributes. Selected case studies will be used to illustrate the integration of such factors in adjusting to home, school, and hospital settings. These cases will stress the psychological factors which hinder learning and retraining procedures. Discussion will center about psychological techniques to produce more effective progress in rehabilitation. 7:40-9:00 3 s.h. MR. SPIELBERGER

S303. **RESEARCH.**—Students who are properly qualified may carry on research work under direction. Hours to be arranged. 3 s.h. STAFF

SECOND TERM

S304. **RESEARCH.**—Students who are properly qualified may carry on research work under direction. Hours to be arranged. 3 s.h. STAFF

RELIGION

PROFESSOR JAMES CANNON, DEAN OF THE DIVINITY SCHOOL—110 DIVINITY SCHOOL (WEST CAMPUS); PROFESSOR H. E. MYERS, CHAIRMAN OF THE DEPARTMENT OF RELIGION—

108 GRAY (WEST CAMPUS); ASSOCIATE PROFESSOR JAMES H. PHILLIPS, DIRECTOR OF UNDERGRADUATE STUDIES IN RELIGION—106 GRAY (WEST CAMPUS);

PROFESSOR H. SHELTON SMITH, DIRECTOR OF GRADUATE STUDIES IN RELIGION—308 DIVINITY SCHOOL (WEST CAMPUS)

THE DEPARTMENT OF RELIGION

FIRST TERM

S51. **THE ENGLISH BIBLE.**—Survey of the contents of the Old Testament books in the light of their origin in the history and religion of the Hebrew people. 7:40-9:00. 3 s.h. MR. PHILLIPS

S52. **THE ENGLISH BIBLE.**—A study of the personalities and literature of the New Testament against their Jewish, Hellenistic and Roman background. 9:20-10:40. 3 s.h. MR. MANSCHRECK

S101. **THE SOCIAL TEACHINGS OF THE PROPHETS AND JESUS.**—A study of the social teachings of the Old Testament prophets and of the social ideas of Jesus as they appear in the four gospels. Not open for credit to students who take Religion 103 or 114. 9:20-10:40. 3 s.h. MR. PHILLIPS

S135. **CHRISTIAN BIOGRAPHY.**—A study of Christianity in the lives and writings of a few key persons, for example, Augustine, Francis of Assisi, Luther, and Wesley. The aim of the course is to present the central stream of the development of Christian thought and practice through the study of men who were significant in their own times and whose ideas are relevant to the understanding of current Christianity. Prerequisite: 3 s.h. of Bible. 11:00-12:20. 3 s.h. MR. MANSCHRECK

SECOND TERM

S51. **THE ENGLISH BIBLE.**—For description see Term I. 7:40-9:00. 3 s.h. MR. PRICE

S52. **THE ENGLISH BIBLE.**—For description see Term I. 9:20-10:40. 3 s.h. MR. OSBORN

S91. AN INTRODUCTION TO CHRISTIAN ETHICS.—A study of the theistic interpretation of man's moral experience, based upon the world-view of the Bible, as contrasted with other classical and contemporary moral philosophies. In the survey of the ethical religion of the Bible special attention is given to the Hebrew prophets, to Jesus and the Apostle Paul. 11:00-12:20. 3 s.h. MR. OSBORN

S114. THE LIFE AND TEACHINGS OF JESUS.—This course considers the period in which Jesus lived, the record of his life, and the meaning of his teachings as recorded in the Synoptic Gospels. Students may not receive credit for I14 and I01; or I14 and I16. 9:20-10:40. 3 s.h. MR. PRICE

THE DIVINITY SCHOOL

Class enrollments will be controlled as occasion may arise so as to secure a fairly even distribution among the courses offered in each term.

FIRST TERM

S102 (DS). CHRISTIAN FAITH AND THE PROBLEM OF EVIL.—Analysis of the questions raised for faith by tragedy, suffering and/or evil, examination of answers proposed in Christian and philosophical literature. (For advanced students.) 9:20-10:40. 3 s.h. MR. FOSTER

S105 (DS). LIFE OF PAUL.—A study of Paul's life on the basis of Acts and the letters of Paul, emphasizing the permanent values in Paul's work and his contribution to the world. 7:40-9:00. 3 s.h. MR. MYERS

S190 (DS). THE CHRISTIAN CRITIQUE OF COMMUNISM.—Analysis of and alternative to the dynamic secular ideology from a religious standpoint. 11:00-12:20. 3 s.h. MR. LACY

S199 (DS). THOUGHT IN AMERICAN CHRISTIANITY.—A survey of Christian social thought since 1830. 7:40-9:00. 3 s.h. MR. SMITH

SECOND TERM

S167 (DS). THEOLOGY AND THE LAY MIND.—Formulation and communication of the Christian faith, for the mind of today. (For advanced students.) 7:40-9:00. 3 s.h. MR. RICHEY

S170 (DS). SEMINAR IN PASTORAL CARE.—For students preparing for full-time pastoral ministry, hospital chaplaincy, industrial chaplaincy, ministry to older people, or work with young people. Practicum. 1:40-3:00. 3 s.h. MR. DICKS

S181 (DS). PRACTICAL PROBLEMS IN PREACHING.—Analysis of selected sermons and discussion of problems facing the preacher in the pulpit. 11:00-12:20. 3 s.h. MR. CARLTON

S197 (DS). CULTURAL HISTORY OF PALESTINE.—A study of significant contributions to civilization made in ancient, medieval, and modern Palestine with special reference to the three religions, Judaism, Christianity, and Islam. 9:20-10:40. 3 s.h. MR. STINESPRING

ROMANCE LANGUAGES

PROFESSOR B. R. JORDAN, CHAIRMAN—214 CARR BUILDING (EAST CAMPUS); PROFESSOR GIFFORD DAVIS, ACTING DIRECTOR OF GRADUATE STUDIES—201 CARR BUILDING (EAST CAMPUS)

The Audio Laboratory will be available to French and Spanish students in courses 1-2, 3-4 and RL218 for supplementary exercises in the spoken language. All auditions will be synchronized with the daily textbook assignments.

FRENCH

FIRST TERM

S1. ELEMENTARY FRENCH.—Introduction to simple conversational patterns, elements of grammar, graded readings. 7:40-9:00. 3 s.h. MR. WALKER

S3. INTERMEDIATE FRENCH.—The progressive development of skills in speaking, understanding and reading. Prerequisite: French 1-2 or two years of high school French. 11:00-12:20. 3 s.h. Mr. HARDEE

S51. INTRODUCTION TO FRENCH LITERATURE.—Development of skill in rapid reading correlated with discussion in French of content and ideas. 7:40-9:00. 3 s.h. Mr. DOW

S52. INTRODUCTION TO FRENCH LITERATURE.—Continuation of French S51, with main emphasis on authors of the nineteenth and twentieth centuries. 9:20-10:40. 3 s.h. Mr. AUBERY

RL S218. THE TEACHING OF ROMANCE LANGUAGES.—Evaluation of objectives and methods; a study of the practical problems involved in teaching these languages on the elementary, secondary and college level; analysis of textbooks, special foreign language programs, audio-visual aids; critical examination of modern techniques in written and oral testing. 11:00-12:20. 3 s.h. Mr. DOW

SECOND TERM

S2. ELEMENTARY FRENCH.—Continuation of S1. 7:40-9:00. 3 s.h. Mr. GRANT

S4. INTERMEDIATE FRENCH.—Continuation of S3 with more extensive reading. 11:00-12:20. 3 s.h. Mr. GRANT

SPANISH

FIRST TERM

S1. ELEMENTARY SPANISH.—Introduction to simple conversational patterns, elements of grammar, graded readings. 11:00-12:20. 3 s.h. Mr. MILLER

S3. INTERMEDIATE SPANISH.—The progressive development of skills in speaking, understanding and reading. Prerequisite: Spanish 1-2 or two years of high school Spanish. 7:40-9:00. 3 s.h. Mr. BLANCHARD

S65. INTRODUCTION TO SPANISH LITERATURE.—Readings from representative Spanish authors. Development of skill in rapid reading correlated with discussion in Spanish of content and ideas. 11:00-12:20. 3 s.h. Mr. CASTELLANO

S68. INTRODUCTION TO SPANISH-AMERICAN LITERATURE.—Readings from representative Spanish-American authors. Development of skill in rapid reading correlated with discussion in Spanish of content and ideas. 7:40-9:00. 3 s.h. Mr. MILLER

RL S218. THE TEACHING OF ROMANCE LANGUAGES.—See statement above.

S264. MODERN AND CONTEMPORARY SPANISH THEATER.—A brief review of modern and contemporary Spanish theater from the period of Romanticism. Lectures, reading, and discussion of the most representative works of Benavente, Martínez Sierra, los Hermanos Quintero, etc. 9:20-10:40. 3 s.h. Mr. CASTELLANO

SECOND TERM

S2. ELEMENTARY SPANISH.—Continuation of S1. 11:00-12:20. 3 s.h. Mr. FLINT

S4. INTERMEDIATE SPANISH.—Continuation of S3 with more extensive reading. 7:40-9:00. 3 s.h. Mr. FLINT

SOCIOLOGY

PROFESSOR HOWARD E. JENSEN, CHAIRMAN—215E SOCIAL SCIENCE BUILDING (WEST CAMPUS); PROFESSOR HORNELL HART, DIRECTOR OF GRADUATE STUDIES—215D SOCIAL SCIENCE BUILDING (WEST CAMPUS)

The Department of Sociology offers graduate work leading to the A.M. and Ph.D. degrees. Before undertaking advanced work in this department, a student must

have completed a minimum of twelve semester hours of approved preliminary courses in the field, and twelve additional semester hours in the field or in related work. A student who is deficient in the minimum required work will be asked to take additional undergraduate courses agreed upon in conference with the Director of Graduate Studies.

Candidates for advanced degrees in Sociology usually take minor work in Psychology, Economics, Political Science, Education, History, or Religion. Detailed requirements for the minor work, and for majors in other departments who wish to present Sociology as minor work, may be obtained from the Director of Graduate Studies.

FIRST TERM

S91-92. GENERAL SOCIOLOGY.—An introduction to the scientific study of social life, its origin, evolution, and organization as illustrated by the study of a number of concrete social problems. 9:20-10:40 and 12:40-2:00. 6 s.h.

MR. McNURLEN

(Course 91-92, or 101, or 93, or 94 is prerequisite to all other courses in the department. Course 91-92, or 101 is required of all students majoring in the department.)

S249. CHILD WELFARE.—A study of hereditary and environmental factors in personality development; infant conservation; welfare responsibilities of the school, emphasizing the physical and mental well-being of the child, play, and compulsory and industrial education; child labor, diagnosis and treatment of delinquency; care of the dependent and neglected child; child-caring agencies, public and private; and a community program of child welfare. 9:20-10:40. 3 s.h.

MR. JENSEN

S276. CRIME AND DELINQUENCY.—A study of the original tendencies of man and the problem of socializing these tendencies; the relations of physical and mental defectiveness and untoward influence in the home and neighborhood to crime; the development of criminological theory and procedure, emphasizing penal and reform methods, and especially modern methods of social treatment and prevention of crime. 11:00-12:20. 3 s.h.

MR. JENSEN

SECOND TERM

S246. PUBLIC OPINION AND PROPAGANDA.—Nature and development of public opinion; relative to attitudes, biases, stereotypes and controversial issues; role of leaders, pressure groups and minority groups; use of radio, press, motion picture and graphic arts; propaganda and censorship; measurements of public opinion. 9:20-10:40. 3 s.h.

MR. SCHETTLER

S274. CONTEMPORARY SOCIAL PROBLEMS.—A study of the causes, extent, significance, and constructive treatment of the principal forms of pathology in modern society; natural disasters, poverty, physical defectiveness, malnutrition, mental deficiency, mental disease, undirected leisure activities and unstandardized commercial recreation, alcoholism, prostitution, vagrancy, and delinquency. Not open to students who have had Sociology 271. 11:00-12:20. 3 s.h.

MR. SCHETTLER

ZOOLOGY

PROFESSOR KARL M. WILBUR, CHAIRMAN—224 BIOLOGY BUILDING (WEST CAMPUS);

PROFESSOR KURT SCHMIDT-NIELSEN, DIRECTOR OF GRADUATE STUDIES—

337 BIOLOGY BUILDING (WEST CAMPUS)

All classes in Zoology offered on Duke Campus in Term I will begin on June 18 and continue through July 16. All classes in Zoology offered at Duke Marine Laboratory at Beaufort, North Carolina, in Term I will begin on June 12 and continue through July 17. All classes in Zoology offered on Duke Campus in Term II will begin on July 22 and continue through August 16. All classes in Zoology offered at Duke Marine Laboratory, Beaufort, North Carolina, in Term II will begin on July 20 and continue through August 24. Students who wish to avoid paying a late registration fee must have their registration completed in advance of these dates. For registration dates see *General Registration* page 19 of this *Bulletin*.

For admission to candidacy for a Master's degree in Zoology, a student should have completed an undergraduate major in Zoology (courses in General Science and Botany are not counted as a part of a Zoology major). This normally amounts to about twenty-four semester hours, which should be distributed among various fields of Zoology, and must include Vertebrate Zoology or Comparative Anatomy, Physiology, and Embryology, passed with creditable grades. A candidate should also have completed at least one year of Chemistry. Work for the degree will require eighteen hours in advanced courses in Zoology, and six hours in another department for a minor, in addition to a thesis. Before registration for a degree, students should confer with the Director of Graduate Studies for the Department. Students not candidates for a degree may take courses offered if they have necessary prerequisites but may not count them toward a degree until an undergraduate major has been completed.

FIRST TERM (Duke Campus)

S1. ANIMAL BIOLOGY.—The principles of biology as applied to animals. Lecture, recitation and laboratory daily, 8:00-12:00, 2:00-4:00. June 18-July 16. 4 s.h.
Mr. WARD

S353. RESEARCH. Hours to be arranged. 2-6 s.h. STAFF

FIRST TERM (Duke Marine Laboratory, Beaufort, North Carolina)

S203. MARINE ECOLOGY.—A study of marine animals in relation to environment. Consideration of environmental factors, succession, rhythms, communities, intraspecific and interspecific relations, productivity, conservation, problems, etc., concerned with animal life in the ocean. Lectures, reviews, conferences, field and laboratory work. 6 s.h.
Mr. GRAY

S353. RESEARCH. Hours to be arranged. 2-6 s.h. STAFF

SECOND TERM (Duke Campus)

S2. GENERAL ZOOLOGY.—A brief survey of the animal kingdom. Lecture, recitation and laboratory daily, 8:00-12:00, 2:00-4:00. July 22-August 16. 4 s.h.
Mr. BAILEY

S353. RESEARCH. Hours to be arranged. 2-6 s.h. STAFF

SECOND TERM (Duke Marine Laboratory, Beaufort, North Carolina)

S211. QUANTITATIVE BIOLOGY.—The analysis and interpretation of measurement data obtained from biological populations including sampling techniques, estimation, the applications of analysis of variance and regression, and computational procedures. Statistical concepts in biology-binomial and Poisson type populations. 6 s.h.
Mr. MONROE

S274. MARINE INVERTEBRATE ZOOLOGY.—A study of invertebrate animals that occur in the Beaufort region. A number of field trips will be made to a variety of habitats to study, collect, and classify animals in their natural environment. The structure and habits of living invertebrates as well as their behavior under certain experimental conditions will be studied in the laboratory. 6 s.h.

Mr. BOOKHOUT

S353. RESEARCH. Hours to be arranged. 2-6 s.h. STAFF

DUKE UNIVERSITY SUMMER SESSION
APPLICATION FOR DORMITORY ROOM

Application for room reservations and all correspondence concerning such reservation should be addressed to: Housing Bureau, Duke Station, Durham, North Carolina.

Room assignment will be made only upon the applicant's admission to the Summer Session, as certified by the Summer Session Office, and upon payment of full room rent. Applicants who expect to be in residence for longer than one term of the Summer Session are urged to make advance reservation for the entire period and thus avoid, to the extent that housing arrangements make it practicable, the necessity of moving from one room to another during the full term of residence.

Rental fees . . . etc. These fees are refundable provided the applicant cancels his room reservation at least fifteen (15) days before the opening of the session for which he is applying for admission.

If the applicant requests a double room but gives no preference of roommate, Bureau officials will try to assign a roommate of seemingly congenial interests. It is understood, however, that the responsibility for getting and keeping a roommate rests with the applicant; otherwise, it will be necessary for him to move to a single room or to make the indicated financial adjustment.

Name..... Date.....

Present address.....

Permanent address.....

(Address to which mail always will be forwarded)

Present position.....

Address.....

Academic degrees earned.....

.....

(College conferring)

(Degree)

(Date conferred)

If you are in college now, give name of institution and your class:

.....

(Name of college)

(Class)

Department of your major subject.....

Will you be writing a thesis this summer? Yes..... No.....

Date of your expected arrival at Duke for the Summer Session.....

Number of weeks you expect to remain.....

Type of room desired: Single..... Double.....

Name of preferred roommate, if any.....

.....

Address.....

DIRECTIONS TO SUMMER SESSION APPLICANTS

All applicants for Summer Session courses who are not now in residence at Duke University must fill out accurately and in detail the form below and return it to the Director of the Summer Session. Preference in enrollment will be given to persons returning the form promptly, but a place in a particular course cannot be assured until all fees are paid. Undergraduates or graduates who are enrolled in a university or college other than Duke University and who are seeking to transfer summer session credits to the college in which they are matriculated should request a course approval form to be certified by their dean or registrar. Persons applying for admission to the Graduate School of Duke University should write the Dean of the Graduate School for the necessary forms in addition to completing the form below.

No. Approved Date.....

APPLICATION FOR ENROLLMENT IN THE DUKE UNIVERSITY SUMMER SESSION

Mr., Mrs., Miss.....
(Please Print)

Street address, Rural route, or P. O. Box.....

Post Office..... State.....

Nationality..... Race.....

Please reserve a place for me in the following courses listed in the Summer Session Bulletin.

Department	No. of Course	Title of Course
------------	---------------	-----------------

.....
.....
.....
.....

Name and address of High School from which you graduated.....

Have you attended a college? Yes..... No.....

Name and address of college.....

Highest degree held:.....

Are you a candidate for a degree? Yes..... No.....

If yes, for which degree?.....

In what school or college of Duke University are you seeking to enroll (check one) :

- Undergraduate credits*
- ☐ Trinity College (men)
 - ☐ The Woman's College
 - ☐ College of Engineering
 - ☐ Special or unclassified
 - ☐ Credits for transfer

- Graduate credits*
- ☐ Graduate School, Arts and Sciences
 - ☐ Divinity School
 - ☐ School of Forestry
 - ☐ Special or unclassified
 - ☐ Credits for transfer

Have you applied for admission to the Graduate School?.....

Are you at present a college student?..... If so, where?.....

..... What class?.....

Are you a full-time teacher?.....

Name and address of school.....

Teaching position.....

Total number years teaching experience.....

Will your fees be paid by:

- (a) Yourself.....
- (b) Veterans' Administration, Public Law 346 or 16.....
- (c) Funds received under Public Law 550.....

Have you attended previous Summer Sessions at Duke: Yes.....;

Years..... No.....

BULLETIN
OF
DUKE UNIVERSITY



**The Graduate School
of Arts and Sciences**

ANNOUNCEMENTS FOR 1957-58

Annual Bulletins

For GENERAL BULLETIN of Duke University, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF UNDERGRADUATE INSTRUCTION, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE COLLEGE OF ENGINEERING, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES, apply to *The Dean of the Graduate School*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF FORESTRY, apply to *The Dean of the School of Forestry*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF LAW, apply to *The Dean of the School of Law*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF MEDICINE, apply to *The Dean of the School of Medicine*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF NURSING, apply to *The Dean of the School of Nursing*, Duke University, Durham, N. C.

For BULLETIN OF THE DIVINITY SCHOOL, apply to *The Dean of the Divinity School*, Duke University, Durham, N. C.

For BULLETIN OF THE SUMMER SESSION, apply to *The Director of the Summer Session*, Duke University, Durham, N. C.

Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

BULLETIN
OF
DUKE UNIVERSITY

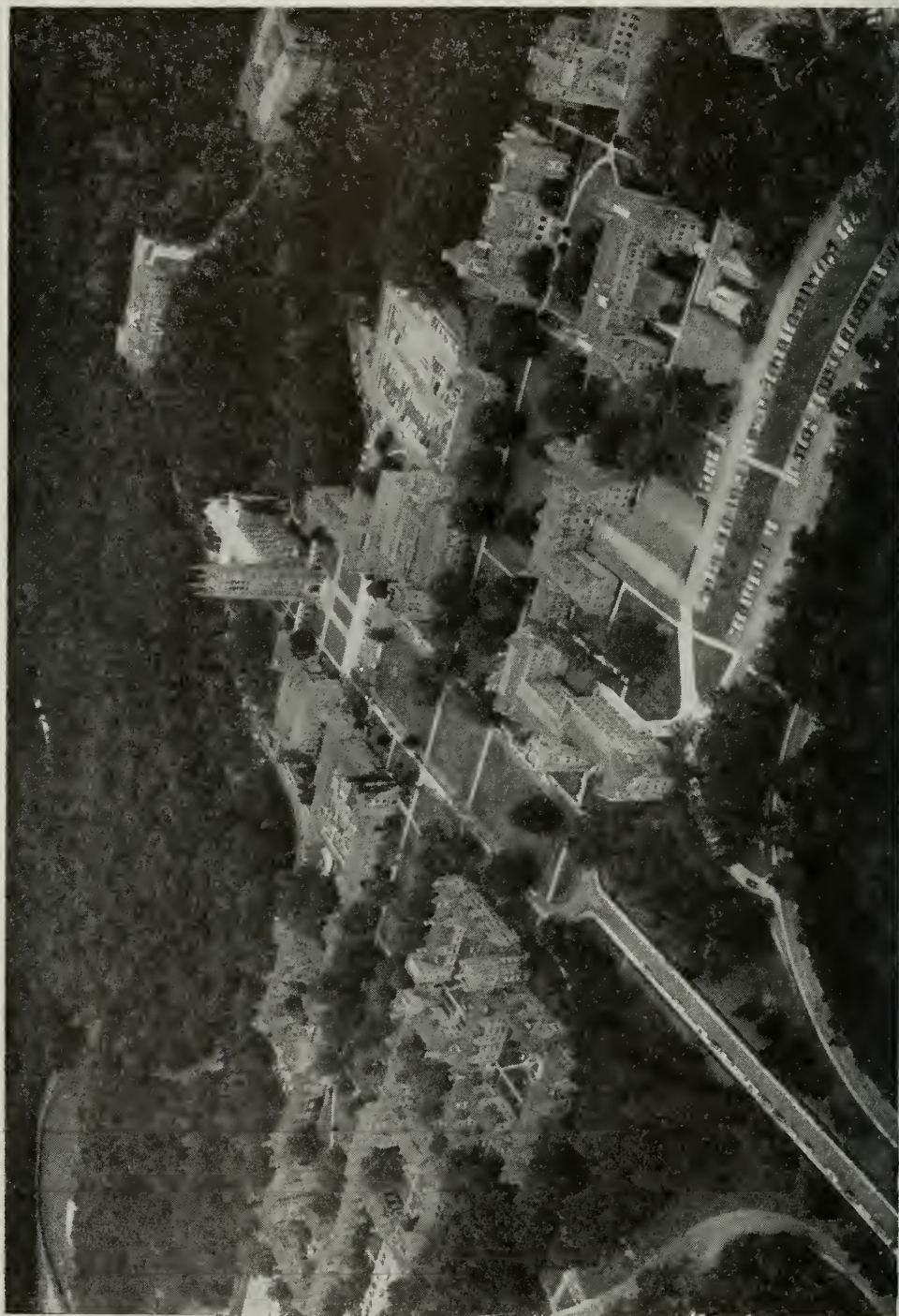
THE GRADUATE SCHOOL
OF ARTS AND SCIENCES



1956-1957
ANNOUNCEMENTS FOR 1957-1958

DURHAM, NORTH CAROLINA

1957



DUKE UNIVERSITY: WEST CAMPUS WITH PORTION OF DUKE FOREST IN BACKGROUND.

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Calendar of the Graduate School



Summer Session 1957

1957

- May 6-7 Monday, Tuesday—Advance registration for current students.
- June 11 Tuesday—Registration of students for Summer Session, first term.
- June 12 Wednesday—Instruction begins for Summer Session, first term.
- July 5 Friday—French examinations for candidates for graduate degrees, 4:00 P.M., 114 Physics Building. Candidates register in the Graduate School Office not later than June 27.
- June 26 Wednesday—Final date for filing with the Dean of the Graduate School statement of intention to complete Master's degree requirements during the first term, and for filing thesis title.
- July 17 Wednesday—First term of Summer Session ends.
- July 19 Friday—Registration of students for second term of Summer Session.
- July 20 Saturday—Instruction begins for second term of Summer Session.
- July 31 Wednesday—Final date for filing with the Dean of the Graduate School statement of intention to complete Master's degree requirements during the second term, and for filing thesis title.
- Aug. 24 Saturday—Second term of Summer Session ends.

Academic Year 1957-1958

- Sept. 16 Monday—Reading, Vocabulary and Grammar Tests in French and German. French, 1:00 P.M., German, 2:30 P.M., both in 114 Physics Building. (See page 39 for information.)
- Sept. 16-18 Monday through Wednesday—Registration of graduate students for first semester.
- Sept. 19 Thursday—Classes begin.
- Oct. 15 Tuesday—Last day for submitting thesis subjects for the degrees of Doctor of Philosophy and Doctor of Education.
- Oct. 21-26 German examinations for candidates for graduate degrees. Candidates register in the Graduate School Office for these examinations not later than October 11.
- Nov. 15 Friday—Last day for submitting thesis subjects for the degrees of Master of Arts, Master of Science, Master of Education, and Master of Arts in Teaching.
- Nov. 27 Wednesday, 12:30 P.M.—Thanksgiving recess begins.
- Dec. 2 Monday, 8:00 A.M.—Classes are resumed.
- Dec. 11 Wednesday—Founders Day.
- Dec. 21 Saturday, 12:30 P.M.—Christmas recess begins.

1958

- Jan. 6 Monday, 8:00 A.M.—Classes are resumed.
- Jan. 8-13 Reading period.
- Jan. 8-9 Wednesday and Thursday—Registration of resident graduate students for second semester.
- Jan. 10 Friday—French examination for candidates for graduate degrees, 4:00 P.M., place to be announced. Candidates register in the Graduate School Office for these examinations not later than December 20, 1957.
- Jan. 14 Tuesday—Final examinations begin.
- Jan. 24 Friday—Final examinations end.
- Jan. 29 Wednesday—Registration for second semester of students not in residence during first semester.
- Jan. 30 Thursday—Classes are resumed.
- March 1 Saturday—Last day for applying for University fellowships, graduate assistantships, and graduate scholarships.
- March 8 Saturday—Students who expect to receive advanced degrees in June must notify the Graduate School Office before this date.
- March 22 Saturday, 12:30 P.M.—Spring recess begins.
- March 31 Monday, 8:00 A.M.—Classes are resumed.
- April 11 Friday—French examinations for candidates for graduate degrees, 4:00 P.M., place to be announced. Candidates register in the Graduate School Office for these examinations not later than April 4.
- April 15 Tuesday—Last day for submitting theses for degrees of Doctor of Philosophy and Doctor of Education.
- May 1 Thursday—Last day for submitting theses for degrees of Master of Arts, Master of Science, Master of Education, and Master of Arts in Teaching.
- May 1 Thursday—Last day for paying special dissertation fee of \$50.00 required of candidates for the degrees of Doctor of Philosophy and Doctor of Education.
- May 5-10 German examinations for candidates for graduate degrees. Candidates register in the Graduate School Office for these examinations not later than April 25.
- May 12-17 Reading period.
- May 19 Monday—Final examinations begin.
- May 29 Thursday—Final examinations end.
- May 31 Saturday—Commencement begins.
- June 1 Sunday—Commencement sermon.
- June 2 Monday—Graduating Exercises.

1957

JULY

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DECEMBER

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Officers of Administration



ARTHUR HOLLIS EDENS, Ph.D., LL.D. <i>President of the University</i>	2138 Myrtle Drive
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MARCUS EDWIN HOBBS, Ph.D. <i>Dean of the Graduate School of Arts and Sciences</i>	115 Pinecrest Road
CHARLES EDWARD JORDAN, A.B., LL.D. <i>Vice-President in the Division of Public Relations and Secretary of the University</i>	813 Vickers Avenue
HERBERT JAMES HERRING, A.M., LL.D. <i>Vice-President in the Division of Student Life</i>	2010 Myrtle Drive
ALFRED SMITH BROWER, A.B. <i>Business Manager and Treasurer</i>	614 West Campus
GERHARD CHESTER HENRICKSEN, CPA <i>Comptroller</i>	216 Forest Wood Drive
BENJAMIN EDWARD POWELL, Ph.D. <i>Librarian</i>	3609 Hathaway Road, Hope Valley
EARL THOMAS HANSON, Ph.D. <i>Director of Admissions, the Graduate School, Secretary of the Graduate Faculty</i>	613 Swift Avenue

EXECUTIVE COMMITTEE OF THE GRADUATE FACULTY

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WILLIAM H. CARTWRIGHT, Ph.D.
CLARENCE GOHDES, Ph.D.
PAUL J. KRAMER, Ph.D.
WALTER M. NIELSEN, Ph.D.
RICHARD L. WATSON, JR., Ph.D.

Instructional Staff



MEMBERS OF THE GRADUATE SCHOOL FACULTY

The date denotes the first year of service at Duke University.

- DONALD KEITH ADAMS, (1931) Ph.D., *Professor of Psychology*
JOHN RICHARD ALDEN, (1955) Ph.D., *Professor of History*
LEWIS EDWARD ANDERSON, (1936) Ph.D., *Professor of Botany*
ROGER FABIAN ANDERSON, (1950) Ph.D., *Associate Professor of Forest Entomology*
JOHN LESLIE ARTLEY, (1955) D.Eng., *Assistant Professor of Electrical Engineering*
JOSEPH RANDLE BAILEY, (1946) Ph.D., *Associate Professor of Zoology*
KATHARINE MAY BANHAM, (1946) Ph.D., *Associate Professor of Psychology*
PAULL FRANKLIN BAUM, (1922) Ph.D., *James B. Duke Professor Emeritus of English*
CHARLES A. BAYLIS, (1952) Ph.D., *Professor of Philosophy*
WILLIAM WALDO BEACH, (1946) B.D., Ph.D., *Professor of Christian Ethics*
JOSEPH WILLIS BEARD, (1937) M.D., *Professor of Surgery; Associate Professor of Virology*
ROLAND FREDERICK BECKER, (1951) Ph.D., *Associate Professor of Anatomy*
FREDERICK BERNHEIM, (1930) Ph.D., *Professor of Pharmacology*
MRS. MARY L. C. BERNHEIM, (1930) Ph.D., *Associate Professor of Biochemistry*
LUCIUS AURELIUS BIGELOW, (1929) Ph.D., *Professor of Chemistry*
WILLIAM DWIGHT BILLINGS, (1952) Ph.D., *Associate Professor of Botany*
*MARTIN LEE BLACK, JR., (1930) M.B.A., C.P.A., *Professor of Accounting*
MARTIN M. BLOCK, (1952) Ph.D., *Assistant Professor of Physics*
HUGO LEANDER BLOMQUIST, (1920) Ph.D., *Professor of Botany*
EDWARD CLAUDE BOLMEIER, (1948) Ph.D., *Professor of Education*
CAZLYN GREEN BOOKHOUT, (1935) Ph.D., *Professor of Zoology*
LLOYD J. BORSTELMANN, (1953) Ph.D., *Assistant Professor of Psychology*
FRANCIS EZRA BOWMAN, (1945) Ph.D., *Associate Professor of English*
BENJAMIN BOYCE, (1950) Ph.D., *Professor of English*
CHARLES KILGO BRADSHER, (1939) Ph.D., *Professor of Chemistry*
RALPH J. D. BRAIBANTI, (1953) Ph.D., *Associate Professor of Political Science*
ROBERTA FLORENCE BRINKLEY, (1947) Ph.D., LL.D., *Professor of English*
FRANCES CAMPBELL BROWN, (1931) Ph.D., *Professor of Chemistry*
WILLIAM HUGH BROWNEE, (1948) Th.M., Ph.D., *Associate Professor of Old Testament*

†ROGER CONANT BUCK, (1953) B.Phil. (Oxon.), *Assistant Professor of Philosophy*

* Absent on sabbatical leave, fall semester, 1956-57.

† Absent on leave, 1956-57.

- MICHAEL J. BUCKINGHAM, (1956) Ph.D., *Visiting Assistant Professor of Physics*
 SULLIVAN G. CAMPBELL, (1955) Ph.D., *Visiting Associate Professor of Mathematics*
 LEONARD CARLITZ, (1932) Ph.D., *Professor of Mathematics*
 JOHN WINDER CARR, JR., (1926) Ph.D., *Professor of Education*
 EBER MALCOLM CARROLL, (1923) Ph.D., *James B. Duke Professor of History*
 ALLAN MURRAY CARTTER, (1952) Ph.D., *Associate Professor of Economics*
 WILLIAM H. CARTWRIGHT, (1951) Ph.D., *Professor of Education*
 HECTOR NERI CASTANEDA, (1956) Ph.D., *Visiting Assistant Professor of Philosophy*
 JUAN R. CASTELLANO, (1947) D.F.L., *Professor of Romance Languages*
 BENJAMIN GUY CHILDS, (1924) M.A., *Professor of Education*
 KENNETH WILLIS CLARK, (1931) Ph.D., *Professor of New Testament*
 ROMANE LEWIS CLARK, (1953) Ph.D., *Assistant Professor of Philosophy*
 *PAUL HIBBERT CLYDE, (1937) Ph.D., *Professor of History*
 LOUIS DAVID COHEN, (1946) Ph.D., *Associate Professor of Psychology; Associate Professor of Medical Psychology*
 ROBERT TAYLOR COLE, (1935) Ph.D., *James B. Duke Professor of Political Science*
 JOEL G. COLTON, (1947) Ph.D., *Assistant Professor of History*
 ROBERT MERLE COLVER, (1953) Ed.D., *Assistant Professor of Education*
 NORMAN FRANCIS CONANT, (1935) Ph.D., *Professor of Mycology; Associate Professor of Bacteriology*
 ROBERT HOWE CONNERY, (1949) Ph.D., *Professor of Political Science*
 FREDERICK AUGUSTUS GRANT COWPER, (1918) Ph.D., *Professor Emeritus of Romance Languages*
 JOHN SHELTON CURTISS, (1945) Ph.D., *Professor of History*
 ROBERT EARL CUSHMAN, (1945) B.D., Ph.D., *Professor of Systematic Theology*
 BINGHAM DAI, (1943) Ph.D., *Professor of Psychology; Professor of Medical Psychology*
 GIFFORD DAVIS, (1930) Ph.D., *Professor of Romance Languages*
 †JEAN-JACQUES DEMOREST, (1948) Ph.D., *Associate Professor of Romance Languages*
 ‡FRANK TRAVER DE VYVER, (1935) Ph.D., *Professor of Economics*
 †DONALD J. DEWEY, (1950) M.A., *Assistant Professor of Economics*
 NEAL DOW, (1934) Ph.D., *Associate Professor of Romance Languages*
 FRANCIS GEORGE DRESSEL, (1929) Ph.D., *Professor of Mathematics*
 KENNETH LINDSAY DUKE, (1940) Ph.D., *Associate Professor of Anatomy*
 MARION M. DUNCAN, (1956) Ph.D., *Visiting Assistant Professor of Physics*
 GEORGE SHARP EADIE, (1930) Ph.D., *Professor of Physiology and Pharmacology*
 HOWARD EASLEY, (1930) Ph.D., *Associate Professor of Education*
 WILLIAM WHITFIELD ELLIOTT, (1925) Ph.D., *Professor of Mathematics*
 ERNEST ELSEVIER, (1950) M.S. in M.E., *Assistant Professor of Mechanical Engineering*
 JOHN WENDELL EVERETT, (1932) Ph.D., *Professor of Anatomy*
 WILLIAM MARTIN FAIRBANK, (1952) Ph.D., *Associate Professor of Physics*

* Absent on sabbatical leave, spring semester, 1956-57.

† Resigned, August 31, 1956.

‡ Absent on sabbatical leave, 1956-57.

- JOHN MORTON FEIN, (1950) Ph.D., *Associate Professor of Romance Languages*
 ARTHUR BOWLES FERGUSON, (1939) Ph.D., *Associate Professor of History*
 JOHN HURT FISHER, (1955) Ph.D., *Associate Professor of English*
 THOMAS M. GALLIE, JR., (1954-55; 1956) Ph.D., *Assistant Professor of Mathematics*
 WILLIAM HENRY GARDNER, JR., (1953) M.Eng., *Assistant Professor of Civil Engineering*
 *NORMAN GARMEZY, (1950) Ph.D., *Associate Professor of Psychology*
 W. SCOTT GEHMAN, JR., (1954) Ph.D., *Assistant Professor of Education*
 JOHN JAY GERGEN, (1936) Ph.D., *Professor of Mathematics*
 ALLAN H. GILBERT, (1920) Ph.D., *Professor of English*
 GEORGE GLOCKLER, (1952) Ph.D., *Visiting Lecturer in Chemistry*
 CLARENCE GOHDES, (1930) Ph.D., *Professor of English*
 WALTER GORDY, (1946) Ph.D., D.H.C., *Professor of Physics*
 †IRVING EMERY GRAY, (1930) Ph.D., *Professor of Zoology*
 EUGENE GREULING, (1948) Ph.D., *Associate Professor of Physics*
 PAUL MAGNUS GROSS, (1919) Ph.D., *William Howell Pegram Professor of Chemistry*
 NORMAN GUTTMAN, (1951) Ph.D., *Assistant Professor of Psychology*
 FRANK GREGORY HALL, (1926-42; 1945) Ph.D., *Professor of Physiology and Pharmacology*
 LOUISE HALL, (1931) S.B.Arch., Ph.D., *Associate Professor of Architecture*
 JOHN HAMILTON HALLOWELL, (1942) Ph.D., *Professor of Political Science*
 †WILLIAM BASKERVILLE HAMILTON, (1936) Ph.D., *Professor of History*
 PHILIP HANDLER, (1939) Ph.D., *Professor of Biochemistry and Nutrition*
 FRANK ALLAN HANNA, (1948) Ph.D., *Professor of Economics*
 EARL THOMAS HANSON, (1946) Ph.D., *Assistant Professor of Political Science*
 GEORGE THOMAS HARGITT, (1930) Ph.D., Sc.D., *Professor Emeritus of Zoology*
 ELWOOD SCOTT HARRAR, (1936) Ph.D., *Professor of Wood Technology*
 HORNE LL NORRIS HART, (1938) Ph.D., *Professor of Sociology*
 CHARLES CLEVELAND HATLEY, (1917) Ph.D., *Professor Emeritus of Physics*
 CHARLES ROY HAUSER, (1929) Ph.D., *Professor of Chemistry*
 DUNCAN CHARTERIS HETHERINGTON, (1930) Ph.D., M.D., *Professor of Anatomy*
 DOUGLAS GREENWOOD HILL, (1931) Ph.D., *Professor of Chemistry*
 MARCUS EDWIN HOBBS, (1935) Ph.D., *Professor of Chemistry*
 CALVIN BRYCE HOOVER, (1925) Ph.D., Litt.D., *James B. Duke Professor of Economics*
 EDWARD CHARLES HORN, (1946) Ph.D., *Associate Professor of Zoology*
 JAY BROADUS HUBBELL, (1927) Ph.D., Litt.D., *Professor Emeritus of English*
 WAYLAND ELROY HULL, (1953) Ph.D., *Assistant Professor of Physiology*
 HAROLD J. HUMM, (1954) Ph.D., *Associate Professor of Botany*
 DON DOUGAN HUMPHREY, (1945) Ph.D., *Professor of Economics*
 MRS. WANDA SANBORN HUNTER, (1947) Ph.D., *Associate Professor of Zoology*
 ALLAN S. HURLBURT, (1956) Ph.D., *Professor of Education*

* Absent on leave, February 1, 1956 through August 31, 1957.

† Absent on sabbatical leave, fall semester, 1956-57.

‡ Absent on sabbatical leave, spring semester, 1956-57.

- WILLIAM H. IRVING, (1936) B.A. (Oxon.), Ph.D., *Professor of English*
 HOWARD EIKENBERRY JENSEN, (1931) B.D., Ph.D., *Professor of Sociology*
 TERRY W. JOHNSON, JR., (1954) Ph.D., *Assistant Professor of Botany*
 EDWARD ELLSWORTH JONES, (1953) Ph.D., *Assistant Professor of Psychology*
 BRADY RIMBREY JORDAN, (1927) Ph.D., *Professor of Romance Languages*
 HENRY KAMIN, (1951) Ph.D., *Assistant Professor of Biochemistry*
 VAN LESLIE KENYON, JR., (1945) M.M.E., *Professor of Mechanical Engineering*
 GREGORY ADAMS KIMBLE, (1952) Ph.D., *Associate Professor of Psychology*
 JOHN KIRBY-SMITH, (1955) Ph.D., *Visiting Professor of Zoology*
 SIGMUND KOCH, (1942-47; 1948) Ph.D., *Professor of Psychology*
 † CLARENCE FERDINAND KORSTIAN, (1930) Ph.D., *Professor of Silviculture*
 PAUL JACKSON KRAMER, (1931) Ph.D., *James B. Duke Professor of Botany*
 WILLIAM R. KRIGBAUM, (1952) Ph.D., *Assistant Professor of Chemistry*
 CHARLES ALBERT KRUMMEL, (1922) Ph.D., *Professor Emeritus of German*
 GEORGE FREDERIC KUDER, (1948) Ph.D., *Professor of Psychology*
 WESTON LABARRE, (1946) Ph.D., *Associate Professor of Anthropology*
 CREIGHTON LACY, (1953) B.D., Ph.D., *Associate Professor of Missions and Social Ethics*
 CHARLES EARL LANDON, (1926) Ph.D., *Professor of Economics*
 JOHN TATE LANNING, (1927) Ph.D., *Professor of History*
 WILLIAM THOMAS LAPRADE, (1909) Ph.D., *Professor Emeritus of History*
 JOHN E. LARSH, (1955) Ph.D., *Visiting Lecturer in Parasitology*
 HAROLD WALTER LEWIS, (1949) Ph.D., *Associate Professor of Physics*
 DANIEL A. LIVINGSTONE, (1956) Ph.D., *Assistant Professor of Zoology*
 † LIONEL WILFRED MCKENZIE, JR., (1948) B. Litt., (Oxon.), M.A., *Associate Professor of Economics*
 JONATHON COLLINS MCLENDON, (1952) Ph.D., *Associate Professor of Education*
 JOHN NELSON MACDUFF, (1956) M.M.E., *Professor of Mechanical Engineering*
 ALAN KREBS MANCHESTER, (1929) Ph.D., *Professor of History*
 PHILIP NICHOLAS SETON MANSERGH, (1957) D.Phil., (Oxon.), Ph.D., *Visiting Professor of History*
 JOSEPH ELDRIDGE MARKEE, (1943) Ph.D., *James B. Duke Professor of Anatomy*
 SIDNEY DAVID MARKMAN, (1947) Ph.D., *Associate Professor of Art History and Archaeology*
 OTTO MEIER, JR., (1934), M.S., E.E., *Associate Professor of Electrical Engineering*
 GEORGE W. NACE, (1951) Ph.D., *Assistant Professor of Zoology*
 AUBREY WILLARD NAYLOR, (1952) Ph.D., *Associate Professor of Botany*
 GLENN ROBERT NEGLEY, (1946) Ph.D., *Professor of Philosophy*
 ERNEST WILLIAM NELSON, (1926) Ph.D., *Associate Professor of History*
 HENRY WINSTON NEWSON, (1948) Ph.D., *Professor of Physics*

* Absent on sabbatical leave, 1956-57.

† Absent on sabbatical leave, fall semester, 1956-57.

‡ Absent on leave, spring semester, 1956-57.

- WALTER MCKINLEY NIELSEN, (1925) Ph.D., *James B. Duke Professor of Physics*
- *LOTHAR WOLFGANG NORDHEIM, (1937) Ph.D., Sc.D., *Professor of Physics*
- *HOWARD THOMAS ODUM, (1954) Ph.D., *Assistant Professor of Zoology*
- HENRY JOHN OOSTING, (1932) Ph.D., *Professor of Botany*
- HARRY ASHTON OWEN, JR., (1951) M.S.E., *Assistant Professor of Electrical Engineering*
- HAROLD TALBOT PARKER, (1939) Ph.D., *Associate Professor of History*
- OSCAR A. PARSONS, (1954), *Assistant Professor of Psychology*
- RANSOM RATHBONE PATRICK, (1954) M.F.A., *Professor of Aesthetics and Art*
- ROBERT LEET PATTERSON, (1945) B.D., Ph.D., *Professor of Philosophy*
- WILLIAM BERNARD PEACH, (1951) Ph.D., *Assistant Professor of Philosophy*
- †ARTHUR SPERRY PEARSE, (1926) Ph.D., LL.D., *Professor Emeritus of Zoology*
- TALMADGE LEE PEELE, (1939) M.D., *Associate Professor of Anatomy; Assistant Professor of Medicine*
- KENNETH E. PENROD, (1950) Ph.D., *Associate Professor of Physiology and Pharmacology*
- HAROLD SANFORD PERRY, (1932) Ph.D., *Associate Professor of Botany*
- RAY C. PETRY, (1937) Ph.D., LL.D., *Professor of Church History*
- OLAN LEE PETTY, (1952) Ph.D., *Associate Professor of Education*
- JANE PHILPOTT, (1951) Ph.D., *Assistant Professor of Botany*
- JACQUES C. POIRIER, (1955) Ph.D., *Assistant Professor of Chemistry*
- BENJAMIN EDWARD POWELL, (1946) Ph.D., *Librarian*
- ‡RICHARD LIONEL PREDMORE, (1950) D.M.L., *Professor of Romance Languages*
- CHARLES WILLIAM RALSTON, (1953) Ph.D., *Assistant Professor of Forest Soils*
- ROBERT STANLEY RANKIN, (1927) Ph.D., *Professor of Political Science*
- WILLIAM WALTER RANKIN, JR., (1926) M.A., *Professor Emeritus of Mathematics*
- BENJAMIN ULYSSES RATCHFORD, (1928) Ph.D., *Professor of Economics*
- FREDERICK JEROME REED, (1935) M.S., *Professor of Mechanical Engineering*
- THOMAS D. REYNOLDS, (1953) Ph.D., *Assistant Professor of Education*
- §HENRY STOUTTE ROBERTS, JR., (1948) Ph.D., *Associate Professor of Zoology*
- JOHN HENDERSON ROBERTS, (1931) Ph.D., *Professor of Mathematics*
- ELIOT H. RODNICK, (1949) Ph.D., *Professor of Psychology; Director of Clinical Training in Psychology*
- ROBERT SAMUEL ROGERS, (1937) Ph.D., F.A.A.R., *Professor of Latin*
- THEODORE ROPP, (1938) Ph.D., *Associate Professor of History*
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* Resigned, August 31, 1956.

† Died December 11, 1956.

‡ Absent on sabbatical leave, 1956-57.

§ Absent on sabbatical leave, spring semester, 1956-57.

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Admission



TO GRADUATE SCHOOL. Admission may be granted to a student who has received an A.B. or B.S. degree from an accredited institution after a four-year course of study. The undergraduate record should be well-rounded and of such quality as to give positive evidence of capacity for success in graduate study.

To apply for admission, the student must submit the following documents: (a) An official application form completely filled out; (b) An official transcript of all his college and graduate work, to be forwarded directly from the Registrar of his college to the Dean of the Graduate School at Duke University. Transcripts sent directly by the applicant are not acceptable. (c) Two or three letters of recommendation, to be furnished by persons best qualified to judge the applicant as a prospective graduate student. (d) The submission of scores on the Graduate Record Examination is required under the following conditions: (1) for all applicants except foreign students for graduate work in the departments of Biochemistry, Economics, and Psychology; (2) when an applicant has taken the examination prior to his application to graduate study; (3) when requested by the Admissions Officer to assist him in arriving at a decision as to the admission of the applicant. If the other documents of the applicant are satisfactory, he may be granted "provisional" admission until the Graduate Record Examination scores are submitted and accepted. Arrangements to take this examination can usually be made through officials of the student's college, or by correspondence with the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

APPLICATION PROCEDURE. A student desiring admission to the Graduate School, should request official application blanks from the Dean. These should be filled out fully and returned at the earliest moment. The other documents needed to complete the application, namely, transcripts, letters of recommendation, and, if required, the Graduate Record Examination scores, must be forwarded directly from the institutions or individuals to the Dean of the Graduate School. In no case will such documents be accepted from the student.

The application and all supporting documents should be submitted to the Dean of the Graduate School not later than August 1 by those applying for the fall semester, or January 1 by those applying for the spring semester. It is difficult to process properly applications received after these dates. It is the student's responsibility to make certain that his application is complete and in order before the dates specified.

When the application is approved, the student will receive a letter of admission, giving the date by which he must notify the Dean of the Graduate School of his intention to enroll for the term for which he is granted admission. In the event the application is not approved, the student will be informed of this fact.

Admission, once granted, is valid only for the term or year specified. Should a student be unable to enter the Graduate School at that time but wishes to be admitted to a subsequent term within a two year period, he must notify the Dean of the Graduate School of this fact and bring his application up to date. If he re-applies after two years from the date when first admitted, the student must follow the procedure used for an original application.

Foreign Students

It is the policy of the Graduate School to admit qualified foreign students to course work and in many instances to candidacy for a degree. In making application the student should follow the same procedures as are required of all other graduate students.

The foreign student whose native language is not English must submit, with his application, a statement by a qualified official that the applicant can read, write, speak, and understand English well enough to pursue a program of graduate study. If the applicant is deficient in this respect he must remove his deficiency before he can be accepted in the Graduate School. He must also present a statement certified by a responsible person that his finances are sufficient to maintain him during his stay at Duke University and a statement by a qualified doctor describing any emotional or physical illness the applicant has had during the five years preceding the time of his application. Unless specific arrangements have been made for a scholarship, the student must pay the regular fees.

Registration

After the applicant has received notification of his admission to the Graduate School and has returned his statement of acceptance of admission, he may present himself for registration. During the registration periods, announced in the *Bulletin*, he first confers with the Director of Graduate Studies of his major department, who prepares an Approval-and-Course Card, listing the course work to be taken during the semester. The student then presents this Approval-and-Course Card to the Graduate School, which enrolls him officially in his courses.

WHO MUST REGISTER. (1) All students who enter course work or residence for credit; (2) all students who have completed minimum requirements for an advanced degree, but continue to use the facilities of the University in their research; (3) all students who wish merely to audit a course or courses.

LATE REGISTRATION. All students are expected to register at the time stated in the *Bulletin*. *Those registering after the close of the announced registration period will be charged a late registration fee of five dollars.*

Degrees Offered



THE Graduate School of Arts and Sciences now offers the following degrees: The Master of Arts (A.M.), The Master of Science (M.S.), The Master of Education (M.Ed.), The Master of Arts in Teaching (M.A.T.), The Doctor of Philosophy (Ph.D.), and The Doctor of Education (Ed.D.).

Regulations Concerning Master's Degrees

RESIDENCE REQUIREMENTS. Candidates for all Master's degrees must spend, as a *minimum*, one full academic year in residence at Duke University. Often more time will prove necessary, depending upon the nature of the student's research problem and upon the student himself. Students who wish to complete their degrees wholly by summer work must be in residence for 30 weeks, and present 30 semester hours of registered credit.

CANDIDACY FOR THE MASTER'S DEGREE. To be considered as a candidate for a Master's degree (A.M., M.S., M.Ed., M.A.T.), the graduate student must (1) have made passing grades in all courses taken during the first period of residence. (If he registers for fewer than 12 semester hours of graduate courses during his first period of residence, he must make passing grades on the initial 12 hours of graduate courses), (2) have made a grade of "G" or "E" on at least 3 semester hours of this work, and (3) have received the approval of the major department (or in the case of the M.A.T., of the supervisory committee).

TRANSFER OF GRADUATE CREDITS. Credit for graduate course work earned at another institution will be determined only after a student has spent one semester at Duke University. After completing his first semester, the student should file a request that his credits be reviewed and a decision made.

Under certain circumstances a maximum credit of 6 semester hours may be allowed for graduate courses completed elsewhere. The acceptance of credit up to this amount, however, will not reduce the minimum period of full-time registered residence at Duke University.

With the approval of both the student's major department and the Dean of the Graduate School, a student who is granted such transfer credit may be permitted to register for as much as 12 semester hours of thesis research instead of the usual 6 semester hours. Or he may

be permitted to fill out his schedule with as much as 6 semester hours of further undergraduate training or 6 semester hours of required language courses on the undergraduate level. In no case will credit be allowed for extension or correspondence courses.

TIME LIMITS FOR COMPLETION OF MASTER'S DEGREES. The candidate for a Master's degree must complete all of the requirements within a period of six calendar years from the date of his initial registration. Credits earned over a longer period of time cannot be credited toward a degree.

THE THESIS. The thesis should demonstrate the student's ability to collect, arrange, interpret, and report pertinent material on his special research problem. Although a publishable document is not required, the thesis must be written in an acceptable style and should exhibit the student's competence in scholarly methods and procedures.

The Master of Arts Degree

PREREQUISITES. As prerequisites to graduate study in his major subject, the student must have completed a *minimum* of 12 semester hours of approved college courses in that subject, and 12 additional semester hours in that subject or in related work. Since some departments require more than 12 semester hours, the student should read carefully the special requirements listed by his major department, which are included as headnotes to the course offerings in the *Bulletin*.

LANGUAGE REQUIREMENTS. The candidate for the A.M. degree must have a reading knowledge of at least one foreign language. (The several departments reserve the right to specify which foreign languages are acceptable.) The language requirement may be satisfied in either of two ways: (1) by passing an examination, officially conducted by the appropriate foreign language department at Duke University, or (2) by a transcript showing the completion of the third college year of one language, or the second college year of each of two acceptable foreign languages. Special language courses are offered during the regular semester for students who do not have sufficient undergraduate training in languages to satisfy alternative (2) and who are not prepared at the time of entry into graduate work to pass the language examination when it is first offered. Inquiries concerning this course should be made at the time of registration.* The language requirements must be satisfied before the Master's examination is taken.

MAJOR AND MINOR SUBJECT. In his graduate work, the student must present acceptable marks for a minimum of 24 semester hours of graduate courses. Of these, at least 12 semester hours must

* See page 39 for further information.

be in the major subject. The student must take a minimum of 6 semester hours in a minor subject which is approved by his major department. The remaining 6 semester hours of the necessary 24 may be taken in either the major or minor department, or in another approved by the major department and by the Dean of the Graduate School. In addition to these he must present a thesis, which carries a credit of 6 semester hours. Thus, his earned credit for the degree totals a minimum of 30 semester hours.

REGULATIONS AND PROCEDURES. On or before November 15 of the academic year in which the degree is expected to be conferred, the student must file with the Dean of the Graduate School, on the official form, the title of the thesis. This title must have the approval of the Director of Graduate Studies in the major department, and of the professor under whose direction the thesis will be written.

The student who completes all of his work for the degree and who expects to receive it at the regular commencement exercises in June, must so notify the Graduate School office before the March 8 preceding.

Four bound, typewritten copies of the thesis must be submitted in approved form to the Dean of the Graduate School on or before May 1 preceding the June Commencement at which the degree will be conferred. They must be submitted at least three, and preferably five, days before the date of the final examination so that they may then be submitted to the several members of the examining committee. Specific instructions concerning the preparation of the thesis may be obtained from the Graduate Office or the Director of Graduate Studies.

THE EXAMINING COMMITTEE AND THE EXAMINATION. After consultation with the professor who has directed the thesis, the Dean of the Graduate School appoints an examining committee composed of the director of the thesis and two other members of the Graduate Faculty, one of whom must be from a department other than that of the major.

The candidate appears before this committee for an examination which lasts for about one and one-half hours. The subject matter covered in the examination is usually restricted to the thesis and to the major field.

If the candidate passes his examination, the examining committee certifies this fact by signing the title page of the thesis. The candidate then returns the original and one carbon copy of the thesis to the Dean of the Graduate School, who deposits them in the University Library.

The Master of Science Degree

PREREQUISITES. The degree of Master of Science is offered in the fields of Civil, Electrical, and Mechanical Engineering. As prerequisites to this degree the student must have earned a Bachelor's degree from an accredited engineering college and have completed a minimum of 12 semester hours work in the major field.

FOREIGN LANGUAGE. There is no foreign language requirement for this degree.

MAJOR AND MINOR SUBJECTS. The work for the Master of Science degree is designed to provide a broad basic foundation in the science of civil, electrical, and mechanical engineering. The student must present acceptable marks for a minimum of 24 semester hours of graduate courses. Of these, at least 12 semester hours must be in the major subject. He must also take a minimum of 12 semester hours of minor work in the Departments of Mathematics, and Physics or Chemistry. In addition to these he must present a thesis, which carries a credit of 6 semester hours. Thus his earned credit for the degree totals a minimum of 30 semester hours.

REGULATIONS AND PROCEDURES. The regulations and procedures and the provisions for examination and an examining committee are the same as those for the Master of Arts degree.

The Master of Education Degree

PREREQUISITE. Before a student is admitted to graduate study for this degree, he should have completed, on the undergraduate level, a minimum of 18 semester hours of approved work in Education.

Before the degree is conferred the student must have had one year of actual teaching experience, or have met certification requirements by supervised student teaching in an accredited school. Such supervised student teaching may be at either the undergraduate or the graduate level.

REQUIREMENTS FOR THE DEGREE. The Master of Education degree may be earned either with or without the presentation of a thesis.

Without thesis: The required work includes a departmental major (Elementary Education, School Administration and Supervision, or Secondary Education) of at least 12 semester hours, and a minor of at least 6 semester hours outside the Department of Education. The remaining 12 semester hours are elective within the area of Education and the minor field, but require the approval of the student's major adviser and the Director of Graduate Studies.

Toward the end of his residence the student must pass a comprehensive examination on his departmental major. This examination shall be prepared and conducted by the instructors of the student's major as designated by the Director of Graduate Studies of the Department of Education. Request to take this examination should be made to the Director of Graduate Studies at least two weeks before the date at which the examination is to be conducted.

With thesis: Students who elect this plan are permitted to substitute a thesis for 6 semester hours of the required course work. The thesis subject must be approved by the professor who is to direct it, and by the Director of Graduate Studies. The title of the thesis must be filed with the Dean of the Graduate School on or before November 15 of the academic year in which the degree is expected to be conferred.

In addition to the thesis, the student must present at least 24 semester hours of course credit. Of these, 12 semester hours must be taken in the student's departmental major.* Six semester hours, constituting a minor, must be taken outside of the Department of Education. The remaining 6 semester hours are elective within the area of Education and the minor field, but require the approval of the student's major adviser and the Director of Graduate Studies.

The regulations concerning the writing and submission of the thesis, and the examination of it, are the same as those governing the thesis for the Master of Arts degree.

The Master of Arts in Teaching Degree

PREREQUISITES. The degree of Master of Arts in Teaching is designed for teachers already in service and for recent graduates of Liberal Arts colleges who wish to enter public school teaching.

A student should normally have completed a minimum of 12 semester hours in his proposed major subject and an additional 12 semester hours in that or related subjects. In the event that a student wishes to undertake a graduate major different from the undergraduate major, the prerequisites may be modified upon the recommendation of the student's committee and the approval of the Dean of the Graduate School.

PROGRAMS FOR THE DEGREE. One of two programs may be arranged, in consultation with the student's committee:

A. A major in Education of 18 to 24 semester hours and 6 to 12 hours in non-education courses.

B. A major in non-education courses of 18 to 24 semester hours and 6 to 12 semester hours in Education.

In both programs a minimum of 30 semester hours is required.

* This who expect to attend Summer Sessions should consult the statement on page 59 regarding course requirements.

The non-education courses are to be taken in one or more subjects ordinarily taught in the secondary schools. The amount and distribution of this work will be determined by the needs of the individual student.

The Master of Arts in Teaching may be earned with or without the presentation of a thesis. If a student, in consultation with his committee, elects to present a thesis, 6 semester hours of the total of 30 semester hours required will be allotted to thesis research. He will then be required to complete 24 semester hours of course credits. The regulations concerning the writing and submission of the thesis, and the examination of it, are the same as those governing the thesis for the Master of Arts degree. Candidates for the Master of Arts in Teaching who have not had teaching experience are required to take Education 215-216 (see description of this course on page 70) in which case a minimum of 36 semester hours is required.

THE COMMITTEE. Each candidate for the degree will be assigned a committee, appointed by the Dean of the Graduate School, to plan his program of study. This committee will consist of three members, at least one of whom will be from the Department of Education, and at least one from another department. The chairman of the committee will normally be chosen from the department of the major.

The Doctor of Philosophy Degree

The Ph.D. degree is essentially a research degree. Although course work is a necessary part of the student's program, the mere accumulation of course credits will not be sufficient for attaining this degree. The granting of the Ph.D. is based primarily upon the student's knowledge of a specialized field of study and upon the production of an acceptable dissertation embodying the results of original research.

Before undertaking a program of advanced work toward the Ph.D., the student should consult with the Dean of the Graduate School or the Director of Graduate Studies in his major department to determine the possibility of securing necessary instruction and supervision of research in his field of specialization.

REQUIREMENTS FOR THE PH.D. DEGREE. The formal requirements, discussed in detail below, for the Ph.D. degree are as follows: (1) foreign languages; (2) major and minor courses; (3) supervisory committee for program of study; (4) residence; (5) preliminary examination; (6) dissertation; (7) final examination. In order to be considered for candidacy for the Ph.D. degree, the student must have passed all of his course work in the first year of graduate study; on at least 9 semester hours he must have made a grade of "C" or better.

FOREIGN LANGUAGES. Normally, a reading knowledge of both French and German is required. Such knowledge is evidenced by the passing of an examination conducted by the appropriate language department at Duke University, in cooperation with the student's major department.*

The Reading, Vocabulary, and Grammar Tests in French and German, given on the first day of registration each year, are open to all entering graduate students and to graduate students who have not previously attempted any language examination offered at Duke University. The tests are not required, but those students whose undergraduate preparation has included courses in foreign languages are encouraged to take one, or both, of the tests. If a student demonstrates adequate skill in a given language, he will be certified as having satisfied the language requirement without further examination. The student who does not demonstrate such skill will be given advice, based on an analysis of his test performance, as to the nature and amount of preparation desirable before he takes the regular language examination administered by the language departments.

During the fall semester a special course, designed to assist graduate students in acquiring a reading knowledge of French, is given for three hours a week. A similar course in German is given during the spring semester. These courses carry no graduate credit. In order to register for either of the courses, a student must reduce his normal load of graduate courses by three semester hours, with no reduction in fees. Students deficient in languages are urged to take these courses which have been planned solely to meet their needs. No auditors are allowed in the special language courses.

With the permission of the major department, and with the approval of the Dean of the Graduate School, a student may be allowed to substitute for either of these another language which has a definite relation to the candidate's program of work for the Ph.D. degree. By rule of the Graduate School Faculty, language examinations must be passed before a student takes his preliminary examination. Some departments require the student to master these languages early in the graduate program.

MAJOR AND MINOR. The student's program of study necessarily demands substantial concentration on courses in his major department. Enough work must be taken in another department to constitute an acceptable minor. Exceptions which permit both the major and minor within the same department are allowed only by the special permission of the Dean of the Graduate School.

COMMITTEE TO SUPERVISE THE PROGRAM OF STUDY. Ordinarily, during the student's third semester of graduate work a

* See pp. 5 and 6 for the schedule of language examinations.

supervisory committee of five members is appointed by the Dean of the Graduate School. This committee, with the professor who is to direct the student's research serving as chairman, formulates the program of study, which is submitted to the Dean of the Graduate School for his approval. Of the five members, one must be from a department (usually the minor) other than the major department. This committee, with occasional necessary changes, serves also as the examining committee for both the preliminary and the final Ph.D. examinations.

RESIDENCE. The normal period of residence is not less than three full academic years beyond the A.B. or B.S. degree. A student who already has his A.M. degree may be allowed one year of residence for it, and thus will need to spend a minimum of two additional years in residence.* In unusual cases, a student who has spent the first two years in residence at Duke University may be allowed to take his third year of residence at some other accredited institution. This can be done only with the approval of the major department and of the Dean of the Graduate School. It should be understood that either the first two years or the last year must be spent in actual residence at Duke. Occasionally, because of undergraduate deficiencies, a student may need to spend additional time beyond the minimum: residence in preliminary courses (for which he will not receive residence credit) as a background for certain aspects of his graduate program.

Except in unusual cases, graduate work of fragmentary character taken over a long period of years, or work completed many years before the student becomes a candidate for the degree at Duke University, will not be accepted as satisfying the requirements of residence.

CREDIT FOR SUMMER WORK. With the approval of the major department and of the Dean of the Graduate School, credit for a maximum of one year's residence may be granted for work completed in Summer Sessions. A full schedule of summer courses, carried for six weeks, constitutes one-fifth of a year's residence credit.

PRELIMINARY EXAMINATION. Near the end of the second academic year of graduate work (or in special cases early in the third year) the student must take his preliminary examination, which ordinarily covers the field of both his major and minor. Conducted by his Supervisory Committee, the examination is oral, or written, or both, as determined by the Committee. *Upon passing this examination, and not until then, the student is accepted as a candidate for the Ph.D. degree.* Transfer students who may already have passed a preliminary examination at another university must nevertheless take the examination at Duke.

PRIVILEGE OF RE-EXAMINATION. Should the student fail

* See page 44 for rules regarding transfer of graduate credit.

the preliminary examination, he may apply, with the consent of his Supervisory Committee and of the Dean of the Graduate School, for the privilege of a second examination to be taken no sooner than six months after the date of the first. Failure on the second examination will render the student ineligible to continue his program for the Ph.D. degree at Duke University.

THE DISSERTATION. The dissertation is expected to be a mature and competent piece of writing, embodying the results of significant and original research.

The subject for the dissertation must receive the written approval of both the Director of Graduate Studies of the student's major department and of the professor who directs the dissertation. The title of the dissertation must be filed with the Dean of the Graduate School on or before October 15 preceding the June commencement at which the degree is expected to be conferred.

The dissertation must be completed to the satisfaction of the professor who directs it; and four bound, typewritten copies in approved form must be deposited with the Dean of the Graduate School on or before April 15 preceding the June commencement when the degree is to be conferred. Instructions concerning the preparation of the thesis may be obtained from the Graduate Office or the Director of Graduate Studies.

After the final examination the original and the first carbon copy of the approved dissertation are returned to the Dean of the Graduate School for deposit in the University Library.

DISSERTATION FEE AND PUBLICATION REQUIREMENT. Not later than May 1 preceding the June commencement when the degree is to be conferred, the candidate must deposit with the Treasurer of the University, a dissertation fee of \$50.00. Should a publication based on the dissertation appear in a form satisfactory to the professor under whom the dissertation was written and to the Dean of the Graduate School, within a period of three years from the date of the degree, the deposit fee will be returned to the student. If no publication based upon the dissertation is presented to the Graduate Office within the three-year period under the conditions stated above, the deposit fee is forfeited and is credited to a Special Dissertation Fund, which is used for subsidizing the publication of such dissertations as are recommended by the Graduate School Faculty.

FINAL EXAMINATION. The final oral examination shall be primarily on the dissertation. Questions may, however, be asked in the candidate's major field. Normally, one year must elapse between the dates of the preliminary and the final examinations.

If a student fails his final examination, he may be allowed to take it for a second time, but not sooner than six months from the date of

his first. Permission to take the second examination must be obtained from the professor who directed the dissertation and from the Dean of the Graduate School. Failure to pass the second examination renders the student ineligible to continue work for the Ph.D. degree at Duke University.

The Doctor of Education Degree

The Doctor of Education is a professional degree planned for those who are, or intend to become, school administrators, supervisors, directors of instruction, curriculum consultants, or college teachers of education.

ADMISSION. The candidate for the Ed.D. degree must meet the same requirements for admission to the Graduate School as the candidate for the Ph.D. degree. In addition to these uniform requirements, the candidate for the Ed.D. (1) must have had at least two years' experience in educational work; (2) must present strong letters of appraisal and recommendation from persons well qualified to speak with authority of his abilities; and (3) must present himself, if possible, for a personal interview. The Standing Committee on the Ed.D. degree reserves the right to insist upon an interview.

RESIDENCE. A minimum period of residence equivalent to three academic years beyond the A.B. or B.S. degree is required for the Ed.D. degree. Either the first two years or the last year must be taken at Duke, and the candidate must spend at least two consecutive semesters at Duke. Occasionally, because of undergraduate deficiencies, a student may need to spend additional time beyond the minimum residence in preliminary courses (for which he will not receive residence credit) as a background for certain aspects of his graduate program.

Except in unusual cases, graduate work of fragmentary character taken over a long period of years, or work completed many years before the student becomes a candidate for the degree at Duke University, will not be accepted as satisfying the requirements of residence.

ACCEPTABLE MARKS ON FIRST YEAR'S WORK. In order to be considered for candidacy for the Ed.D. degree, the student must have passed all of his course work in the first year of graduate study; on at least 9 semester hours he must have made a grade of "G" or better.

PRELIMINARY EXAMINATION. By the end of his second year of residence the candidate for the Ed.D. degree will take a preliminary examination similar in scope to that described for the Ph.D. degree. Only after he passes this examination, will he be considered a candidate for the degree.

PROGRAM OF WORK. The candidate for the Ed.D. degree will choose as his major field either Educational Administration and Supervision or Curriculum and Instruction.

Candidates in Administration and Supervision will take approximately twenty-four semester hours in that field, including the seminar in School Administration. In addition, they will take approximately twenty-four semester hours in other professional courses and a minor of at least twenty-four semester hours chosen from economics, law, political science, psychology and sociology.

Candidates in Curriculum and Instruction will take approximately twenty-four semester hours in Curriculum and Instruction. In addition, they will take from twelve to twenty-four hours in other professional courses, and a minor of from twenty-four to thirty-six hours in the humanities, the natural sciences, or the social sciences, exclusive of professional education.

The program of work for each candidate must be approved by the Standing Committee for the Ed.D. degree.

DISSERTATION. The candidate must write a dissertation, for which the formalities of presentation, including its defense in a final examination, are the same as those for the Ph.D. degree. The type of dissertation will depend upon which of the following plans the candidate adopts.

Plan "A." A candidate choosing Plan "A" will write a dissertation which is expected to be a mature and competent piece of writing, embodying the results of significant and original research. It must be, in essence, a contribution to knowledge.

Plan "B." A candidate choosing Plan "B" will serve at least a year in an administrative post, or a teaching position in an elementary or secondary school, subsequent to the completion of the second year of residence. His dissertation may be concerned with a problem, or several closely related problems, growing out of this experience. Although the dissertation written under Plan "B" is of a practical nature, it must demonstrate the candidate's ability to investigate and report on a significant phase of education in his major field.

DISSERTATION FEE AND PUBLICATION REQUIREMENT. The dissertation fee and the publication requirement are the same as those for the Ph.D.

General Regulations

SIZE OF CLASSES. Classes which carry graduate credit are limited in size to twenty-five students. In exceptional cases this regulation may be modified, but only by permission of the Executive Committee of the Graduate School Faculty on the recommendation of the department concerned.

GRADING OF GRADUATE STUDENTS. Grades in the Graduate School are as follows: "E," "G," "S," "F," and "Inc." "E" (exceptional) is the highest mark. "G" (good) and "S" (satisfactory) are the remaining passing marks. "F" (failing) is below passing, and "Inc." (incomplete) indicates that some portion of the student's work is missing, for a satisfactory reason, at the time the grades are made out. The professor who gives an "Inc." for a course specifies the date by which time the student must have made up the deficiency. In no case may an extension be granted beyond one calendar year from the date the course ended. If the course is not completed, a statement of "No credit" is made upon the student's record.

CHARGE FOR REQUESTED TRANSCRIPTS. A student who wishes to transfer his credits from Duke University to another institution is entitled to one free transcript of his record. A fee of one dollar, payable in advance, is charged for each additional copy.

TRANSFER OF GRADUATE CREDITS. Credit for graduate course work earned at another institution will be determined only after a student has spent one semester at Duke University. After completing his first semester, the student should file a request that his credits be reviewed and a decision made.

WITHDRAWAL FROM GRADUATE SCHOOL. If a student wishes to withdraw from the Graduate School, he should notify both the Director of Graduate Studies in his major department and the Dean of the Graduate School prior to the date of his expected withdrawal. When withdrawal occurs during the first 14 days of a semester, a refund of tuition and fees less \$25.00 may be made to the student.

WITHDRAWAL FROM GRADUATE COURSES. If a student wishes to withdraw from a graduate course within 14 days of registration he may do so by obtaining the approval of the Director of Graduate Studies in his department. To withdraw after 14 days have elapsed he must have the approval of the instructor of the course, the Director of Graduate Studies in the student's major department, and the Dean of the Graduate School. When the withdrawal is approved, a notation of withdrawal is made on the student's record. If the student withdraws from a course without the requisite approval, an entry of "Dropped Unofficially" is made in his record followed by an F (failing) in the grade column.

GRADUATE CREDIT EARNED BEFORE A.B. DEGREE IS GRANTED. Ordinarily no credit for graduate courses earned before a student has been awarded his A.B. or B.S. degree will be allowed. However an undergraduate student at Duke University, who, at the beginning of a semester, lacks no more than 9 semester hours for fulfilling the requirements for the A.B. or B.S. degree, may obtain permission from the Dean of the Graduate School to enroll for graduate

courses sufficient to bring his total program to fifteen hours a week. Such graduate courses will be credited toward the A.M., M.S., M.Ed., or M.A.T., provided that the student meets the requirements for admission to the Graduate School, and that he is duly registered in the Graduate School at the beginning of that term.

GRADUATE CREDIT FOR COURSES TAKEN IN THE SCHOOL OF LAW. Upon the recommendation of the Director of Graduate Studies, and upon the approval of the Dean of the Graduate School, students in the Social Sciences may take certain courses in the School of Law for graduate credit. In exceptional instances courses in the School of Law may be considered as fulfilling a student's requirements for a minor.

Awards and Fees



Fellowships, Scholarships, and Assistantships

FOR the encouragement and financial assistance of graduate students of marked ability, Duke University has established a considerable number of fellowships, scholarships, and assistantships. The stipends for these range from \$400 to \$2,000. Holders of grants pay tuition and other fees regularly required of all graduate students.

Fellows and scholars pay full tuition and fees and are registered for a full schedule of course work and receive full residence credit. In general, assistants pay four-fifths tuition and fees, are registered for a four-fifths schedule, and receive four-fifths residence credit.

APPLICATION FOR GRANTS. Applications for these grants, along with all supporting documents, must be submitted on or before March 1. Notification of awards is made about April 1. Late applications will be considered, should any vacancies occur in the list of appointees. No appointment is made for longer than one academic year.

Further information and application forms may be obtained from the Dean of the Graduate School, Duke University.

Grants offered for 1957-58 are:

FELLOWSHIPS: Nineteen James B. Duke Fellowships with stipends of \$2,100; one Angier Duke Memorial Fellowship of \$2,000; one Ottis Green Foundation Fellowship in Humanities or Social Sciences of \$1,600; four Gurney Harriss Kearns Fellowships in Religion ranging from \$1,400 to \$1,800; University Fellowships ranging from \$1,000 to 1,800.

GRADUATE SCHOLARSHIPS. Graduate Scholarships of \$800 to \$1,600 for first-year graduate students who plan to enter the basic fields of Arts, Sciences, and Social Studies; University Scholarships ranging from \$400 to \$1,500.

GRADUATE ASSISTANTSHIPS. Appointments as Departmental Assistants and readers carry a total stipend in the range of \$800 to \$2,000. The value of the stipend is determined by the fraction of time given to assisting, the qualifications of the assistant, and the nature of work assigned.

RESEARCH ASSISTANTSHIPS. Appointments for pre-doctoral candidates whose special training and qualifications enable them to

serve as assistants to individual staff members in certain departments. Stipends range from \$400 to \$2,700 based on the assisting time required.

Appointments to qualified, advanced students as Research Associates, Research Fellows, and Research Scholars. Stipends range upward from about \$2,000.

CHARLES W. HARGITT RESEARCH FELLOWSHIP IN ZOOLOGY. The Charles W. Hargitt Fellowship in Zoology is limited to research in the field of cellular studies. It is primarily for post-doctoral applicants and established investigators on sabbatical leave who desire to engage in full-time research. The stipend will vary, depending upon previous training and experience, but in general will provide an income equivalent to that of a first year instructor and may be higher in the case of established investigators.

The recipient will have no departmental duties, but space and facilities will be provided.

The fellowship may occasionally be granted to a pre-doctoral applicant in his final year of graduate work who has met all degree requirements other than completion of research, and whose research gives promise of unusual merit.

Appointment is for one year with the possibility of reappointment. Inquiries and applications should be made to Dr. Henry S. Roberts, Department of Zoology, Duke University, Durham, North Carolina.

FELLOWSHIPS AND GRADUATE SCHOLARSHIPS IN FORESTRY. Information regarding special fellowships and graduate scholarships in forestry may be obtained from the Dean of the School of Forestry, Duke University, Durham, North Carolina.

PART-TIME INSTRUCTORS. A number of departments offering graduate work make use of exceptionally qualified graduate students as part-time instructors. These students are usually able to register for three-fifths of a full graduate program. Inquiries concerning such appointments should be directed to the Chairman of the Department concerned.

PAYMENTS TO HOLDERS OF GRANTS. Payments of stipends to all graduate students holding fellowships, scholarships and graduate assistantships for the academic year are made by the University Treasurer in eight monthly installments payable on the 20th of each month beginning October 20th. Arrangements may be made to pro-rate tuition charges on the same basis.

Tuition, Fees, and Expenses

GENERAL FEES IN THE ACADEMIC YEAR. The following table shows the general fees and charges collected from all students. All fees for each semester are due and payable, unless otherwise speci-

fied, at the time of registration at the beginning of that semester. No student is admitted to classes until arrangements have been made with the Treasurer of the University for the settlement of fees.

Tuition, per semester.....	\$225.00
General Fee,* per semester.....	60.00
Athletic Fee, not including Federal Tax, Optional, per year, payable in the fall semester	10.00
Room-rent—See detailed statement below.	
Special Dissertation Fee, payable by candidates for the Ph.D. degree, on or before the May 1 preceding the granting of the degree.....	50.00

Living Accommodations

Women graduate students occupy Epworth Hall, which provides facilities for fifty-seven women, on the Woman's College Campus. Dining hall facilities are not available in Epworth Hall. Meals may be had in the cafeterias of the Unions. The rental charge for a single room is \$250.00 for the academic year, or \$125.00 each semester. The rental charge for a double room is \$400.00 for the academic year, or \$100.00 for each occupant each semester. There are no lodging facilities on campus for married couples. Such students should plan to arrange for rooms or apartments in private homes in the city. The Housing Bureau maintains a file of rooms and apartments listed with it for rental. Students may use this file as an aid to locating suitable lodging accommodations.

The Men's Graduate Center is available to men of the graduate and professional schools. It has facilities for four hundred men, complete with lounges, study rooms, recreational rooms, post office and dining hall. The rooms are equipped for two persons and the rental charge for a double room is \$350.00 for the academic year, or \$87.50 for each occupant each semester.

Rooms are rented for a period of not less than one semester, or in the case of a medical student, one quarter, and without special arrangements, the rate is \$1.00 per day with a minimum charge of \$25.00.

Room reservations are made through the Housing Bureau only after official acceptance for admission to the University. A \$25.00 room deposit is required of each applicant before a room reservation is made. The initial room deposit is effective during the student's residence in the University if attendance is continuous in regular academic years.

This deposit will be refunded under the following conditions:

- a. Within thirty days after the student has been graduated.
- b. Upon withdrawal from the University, provided written notice is received in the Housing Bureau by August 1, for cancellation

* General Fees, in lieu of most special charges, include the following fees: Matriculation, Medical, Library, Damage, Commencement, Diploma, and an average of the Laboratory and Materials Fees.

of a reservation for the fall semester; and not later than January 15, for cancellation of a reservation for the spring semester.

- c. When the reasons requiring withdrawal are beyond the student's control.

No refund is made until the occupant has checked out of his room through the Housing Bureau and has settled all of his account with the Treasurer.

A resident student, in order to retain his room for the succeeding academic year, must make application at the office of the Housing Bureau for confirmation of the reservation in accordance with the plan that is published during the school year.

Any exchange of rooms must be arranged at the Housing Bureau. Persons exchanging rooms without the approval of the Housing Bureau will be subject to charges for both rooms.

The authorities of the University do not assume responsibility for the persons selected as roommates. Each student is urged to select his roommate when the room is reserved.

Beds and mattresses (39"x74"), tables, chairs, dressers, mirrors, and window shades are furnished by the University. The student supplies linens, blankets, and pillows. Rugs, totaling not more than 54-square-feet, study lamps, and curtains are permissible, and if desired, are furnished by the room occupants.

Regulations governing the occupancy of rooms will be supplied directly from the Housing Bureau when room reservations are made. Occupants are expected to abide by these regulations.

BOARD. Food service on both the Woman's College Campus and the West Campus is cafeteria style. The cost of meals approximates \$1.75 to \$2.25 per day, depending upon the need and taste of the individual. The dining facilities on the West Campus include three cafeterias with multiple choice menus, and, in addition, the Oak Room, where full meals and *a la carte* items are served. The Men's Graduate Center has a cafeteria open at meal hours, and a coffee lounge which is open until 11:00 P.M. The prices are the same as in the West Campus Union.

ESTIMATED EXPENSES IN THE ACADEMIC YEAR. The necessary expenses of a graduate student are moderate. The University dormitories and Unions provide comfortable and wholesome living conditions at a minimum cost. Incidental expenses for recreation, traveling, clothes, and other items naturally depend on the tastes and habits of the individual. The table below lists the necessary college expenses for one year for a full program of work:

	<i>Low</i>	<i>Moderate</i>	<i>Liberal</i>
Tuition	\$ 450	\$ 450	\$ 450
General Fee.....	120	120	120
Room rent	175	200	225
Board	450	500	525
Laundry	30	40	50
Books	30	40	50
	<u>\$1255</u>	<u>\$1350</u>	<u>\$1420</u>

SPECIAL CHARGES FOR TEACHERS AND OTHERS. In order to assist North Carolina teachers in their professional preparation, Duke University grants a special tuition rate to members of the faculties of neighboring public schools and colleges, currently engaged in full-time teaching while taking courses in the Graduate School of Arts and Sciences.

Other persons eligible for these special fees include full-time employees of Duke University who are paid on a monthly basis throughout the year, ministers of neighboring churches, and wives of Duke faculty members. In no instance do these reduced rates apply to teachers and ministers while on leave of absence.

Such persons may enroll for one or two courses (in no case totalling more than 7 semester hours per semester) upon the payment of a fee of \$5.00 for registration for each semester and a tuition fee of \$7.50 per semester hour of credit.

These special fees do not apply to the holders of fellowships, scholarships, or assistantships, or to part-time instructors.

The student must meet the same admission standards required of all graduate students. No more than two-fifths residence credit per year may be earned under this reduced-tuition arrangement.

Facilities for Graduate Study



The Libraries

THE University Libraries contained 1,244,880 volumes on July 1, 1956. In addition to the collections in the General Library, there are eight school and departmental libraries: Divinity, 75,784 volumes; Engineering, 24,231 volumes; Law, 107,563 volumes; Medical, 60,115 volumes; Woman's College, 108,752 volumes; Biology-Forestry 56,401 volumes; Chemistry, 16,669 volumes; Mathematics-Physics, 18,713 volumes. In 1955-56 47,748 volumes were added; 4,443 periodicals and 75 newspapers are received currently.

The General Library building, which was doubled in size in 1949, incorporates many modern arrangements for the preservation of the collections and for the convenience of the research scholar. Book stacks, storage areas, and quarters for rare books and manuscripts are air-conditioned. In the stacks, 250 carrells are available to graduate students as places of study, and a large reading room on the first floor of the building is reserved for graduate students. Upon application, graduate students may receive permit cards entitling them to use of the stacks.

A division of photographic services, with the most modern cameras and other equipment for microfilming or other photographic reproduction of printed and manuscript materials, provides a battery of reading machines to serve the Library's large collection of microfilms of rare books, periodicals, and newspapers.

The extensive resources of the Library for research students may be suggested by the following special collections:

THE TRENT COLLECTION OF WALT WHITMAN, containing the first and all other important early editions or issues of *Leaves of Grass*; books and articles of Whitman biography and criticism; nearly 300 manuscripts and 400 letters; and pictures, sheet music and other miscellanea.

THE GEORGE WASHINGTON FLOWERS COLLECTION of books, manuscripts, pamphlets, and newspapers on all phases of Southern history.

THE ARENTS COLLECTION of several hundred volumes relating to the culture and production of tobacco and the manufacture and distribution of tobacco products.

THE JAMES A. THOMAS COLLECTION of books on Chinese history and culture.

THE GUIDO MAZZONI LIBRARY, a collection of approximately 23,000 volumes and 67,000 pamphlets covering the whole range of Italian literature, with special strength in the nineteenth century.

THE GUSTAVE LANSON LIBRARY of 12,000 books and monographs on French literature.

LATIN-AMERICAN COLLECTIONS, built around a special Peruvian library of 7,000 books and manuscripts, a Brazilian library of several thousand volumes, and an Ecuadorian library of 2,000 volumes, supplemented by strong collections of the public documents of these and other Latin-American countries.

THE ROBERTSON LIBRARY of Philippiniana.

THE FRANK C. BROWN FOLKLORE COLLECTION, consisting of about 38,000 manuscript pieces, 1,400 vocal recordings, and 650 musical scores of North Carolina folklore.

THE STRISOWER LIBRARY of International Law, numbering about 5,000 volumes, with many rare books and periodical files.

THE HOLL CHURCH HISTORY LIBRARY, dealing primarily with the period of the Reformation.

COLLECTIONS IN ENGLISH AND AMERICAN LITERATURE, where emphasis has been placed principally on the eighteenth and nineteenth centuries, with collections of Swinburne, Tennyson, Rossetti, and Bryant, significant groups of annotated copies and first editions of Coleridge and Byron, the Carroll Wilson collection of Emerson, some 5,000 items of eighteenth-century English poetry and prose, and the Paul Hamilton Hayne library of American literature.

In addition to these and other special collections, the Libraries contain excellent files of United States federal and state documents, public documents of many European and Latin-American countries, and publications of European academies and learned societies. The newspaper collection, with 13,250 volumes and 8,092 reels of microfilms, has several long eighteenth-century files, strong holdings of nineteenth-century New England papers, and of ante-Bellum and Civil War papers from North Carolina, South Carolina, and Virginia: there are also many European and Latin-American papers. The manuscript collection of 1,793,000 items is particularly strong in all phases of the history, politics, and social and economic life of the South Atlantic region, though it includes also significant papers in English and American literature, and several notable medieval manuscripts in both Greek and Latin.

HISPANIC STUDIES PROGRAM. The Graduate School offers an inter-departmental program of Hispanic studies leading to the A.M.

and Ph.D. degrees. Students may write their theses and take their degrees in history, economics, political science, sociology, and Hispanic languages and literatures. The purpose of the program is to make possible desirable combinations of courses on the Hispanic world in these related disciplines and to bring to bear more strength of the faculty upon the training of a single candidate. This may be achieved through a judicious use of minors or by such special arrangements as may from time to time become necessary.

The Duke University Library holdings have been built up to facilitate graduate work and research in Hispanic-American cultural history, inter-American relations, economic history, politics, and Spanish-American literature. These collections are being constantly enlarged.

Science Laboratories

BOTANICAL AND ZOOLOGICAL LABORATORIES. Facilities for graduate study in the Department of Botany and Zoology are found on both the East and the West Campuses. In addition to well-equipped laboratories for teaching and research in the various fields of botany and zoology, special facilities, such as animal rooms, greenhouses, darkrooms, a small shop, a refrigerated room, and air-conditioned rooms, are available.

The Botany Herbarium, containing over 150,000 specimens, is particularly strong in material from the Southeast and includes notable collections of mosses, ferns, and grasses. The Biology-Forestry Library contains an outstanding collection of books and serials, including most of the important American and foreign periodicals in botany, forestry, zoology and related fields.

Unique assets for teaching and research are the Sarah P. Duke Gardens, conveniently accessible on the West Campus; the Duke Forest, comprising some eight thousand acres of woodland adjacent to the West Campus; and the Duke University Marine Laboratory at Beaufort, North Carolina. The marine station is exceptionally well located for the study of animal and plant life in the ocean and in the coastal plain area. Graduate courses of instruction are given at the Marine Laboratory during the summer months; research facilities are available throughout the year.

Scholarships for advanced study during the summer months are maintained at the Highlands Laboratory, Highlands, North Carolina, at the Marine Biological Laboratory, Woods Hole, Massachusetts, and ten scholarships are offered at the Duke University Marine Laboratory at Beaufort. Requests for information concerning the scholarships at the Highlands Laboratory should be addressed to the Botany Department, those concerning scholarships at Woods Hole to the Zoology

Department, and those concerning scholarships at Beaufort to Dr. C. G. Bookhout, Director of the Marine Laboratory, c/o the Zoology Department.

PHYSICAL LABORATORIES. The Physics Building, comprising about 77,000 square feet of floor space, is devoted to the research and instruction of the Departments of Physics and Mathematics.

In addition to the lecture halls and the elementary laboratories, the building includes special laboratories for work in electrical measurements, electronic, microwaves, optical spectroscopy, atomic, nuclear, and low temperature physics. Special research equipment includes: a 21-foot concave grating and other instruments for visible, ultraviolet, and Raman spectra; facilities for research in microwave spectroscopy, and other high frequency phenomena; crystal counters, and a liquid helium bubble chamber for use in high energy particle research; a four-million-volt Van de Graaff accelerator, and associated equipment for nuclear physics research; a helium liquefier, other low temperature equipment, and a large electromagnet for nuclear resonance research below 1° Kelvin.

The Physics Building contains the Mathematics-Physics library, and a shop staffed by four instrument mechanics, two electronic technicians, and a glass blower.

CHEMISTRY LABORATORIES. The Chemistry Building is a modern laboratory with a floor area of approximately 57,000 square feet. Of this space, over half is devoted to research and advanced teaching. Excellent facilities for research are available, including recording spectrophotometers for ultraviolet, visible and infrared spectroscopy, recording polarographs, paramagnetic resonance absorption equipment, and equipment for light-scattering measurements.

A well-equipped shop, operated by a competent mechanic provides facilities for the construction of special apparatus and for the repair and maintenance of instruments.

The Chemistry Library, located in the building, has on its shelves over 16,000 volumes and currently subscribes to over 150 scientific periodicals.

PSYCHOLOGY LABORATORIES. Graduate work in psychology is carried on in two adjacent buildings providing about 16,000 square feet of floor space. In addition to general research facilities, the Laboratories are specifically equipped for research in visual perception, small group behavior, and human and animal learning. Additional special apparatus includes automatic computation equipment for research in test construction. A departmental shop, with a competent technician in charge, is maintained for the design, construction, and maintenance of special apparatus.

A number of clinical installations for adults and children, devoted to an extensive range of clinical and guidance problems, cooperate with the Department in providing additional facilities for research and training in clinical and counseling psychology. In addition, a nursery school is maintained in the laboratory.

MEDICAL SCHOOL. In the School of Medicine elaborate facilities are provided for post-graduate research in the various branches of medical science. The Departments of Anatomy, Bacteriology, Mycology and Immunology, Biochemistry and Nutrition, and Physiology and Pharmacology offer certain courses and research facilities to students in the Graduate School of Arts and Sciences. The Duke Hospital Library is available to all graduate students.

ENGINEERING LABORATORIES. The College of Engineering Building, comprising about 80,000 square feet of floor area, is devoted to the research and instruction of the Departments of Civil, Electrical, and Mechanical Engineering. Each of the three wings houses the laboratories of one of these three departments. In addition, the building contains the library, lecture hall, class rooms, offices, conference rooms, drafting rooms, photographic laboratories, and shops.

In addition to the undergraduate laboratories, special facilities are provided for engineering graduate research in structural analysis, soil mechanics, materials of construction, hydrodynamics, dielectric materials, ferromagnetic materials, energy conversion, instrumentation, high voltage phenomena, heat transfer, environmental thermodynamics, vibration studies, and response of physical systems. These facilities are described in the *Bulletin of the College of Engineering*.

Duke Forest

The Duke Forest consists of approximately 7,600 acres of land, most of which is adjacent and easily accessible to the University campus. Situated in the lower Piedmont region and composed of second-growth shortleaf pine, loblolly pine, and hardwoods, the Forest is representative of the various types of timber growth and soils found throughout the region. Through placing the Forest under intensive management for forestry purposes, substantial progress has been made in developing the educational work and research in forestry.

The proximity of the Forest to the laboratories, greenhouses, and library facilities of the University provides an excellent opportunity for advanced study and research in forestry. Research, particularly in the fields of silvics, forest soils, silviculture, forest management, properties of wood, forest-tree physiology, forest entomology, and forest pathology, is well under way. Several members of the botany and zoology staffs are also engaged in research in the Duke Forest.

Commonwealth-Studies Center Research

Duke University, with the assistance of a grant from the Carnegie Corporation, has established a Center for British Commonwealth Studies which is devoted primarily to the encouragement of research by Duke University professors and graduate students interested in the Commonwealth and the encouragement of research at Duke University by professors and graduate students from Britain, Canada, Australia, New Zealand, and South Africa on relevant economic, political and historical problems.

During its first two years the Center has offered, in addition to Duke faculty grants, assistance to those engaged in several types of research activity. (1) A number of outstanding social scientists and officials from the Commonwealth have delivered lectures. It is anticipated that these lectures and special studies, dealing with various aspects of the developments in the Commonwealth, will be published in a series. (2) A selected group of professors from the Commonwealth have visited Duke University for varying periods of time. (3) Advanced graduate students from Duke University are being assisted to complete research work on Ph.D. dissertations in Commonwealth nations. (4) A number of advanced graduate students from the Commonwealth have been awarded fellowships in order to enable them to complete work for the Ph.D. degree in relevant fields in the United States.

Oak Ridge Institute of Nuclear Studies

Duke University is one of the sponsoring universities of the Oak Ridge Institute of Nuclear Studies located at Oak Ridge, Tennessee. Through this cooperative association with the Institute, the graduate research program has at its disposal all the facilities of the National Laboratories in Oak Ridge and of the research staffs of these laboratories.

Cooperative Programs with the University of North Carolina

INTERCHANGE OF REGISTRATION. Under a plan of cooperation between the greater University of North Carolina and Duke University, students regularly enrolled in the Graduate School of the greater University during the regular academic year, and paying full fees to that institution, may be admitted to a maximum of two courses per semester in the Graduate School of Duke University upon payment of a nominal registration fee of two dollars and of any other special

fees regularly required of all students. Under the same arrangements, students in the Graduate School of Duke University may be admitted to course work at the greater University of North Carolina.

LIBRARY EXCHANGE. Students of both the University of North Carolina and Duke University are granted certain library privileges in the respective libraries of each University. Books unavailable in one library may be procured at short notice through an interlibrary loan service.

Research and Publication

The several departments of the University are devoted to research investigation as well as to instruction. Since the University exists for the promotion and diffusion of knowledge, attention is rightly placed, in the Graduate School, on research activities.

In furtherance of the University's obligation to promote and diffuse knowledge, the President annually appoints a University Council on Research, which receives applications from members of the various faculties for subsidies in support of research. Vigorous and forward-looking policies of this Research Council have initiated and encouraged the completion of many substantial and important research projects.

The Duke University Press takes its place as a significant agency in the diffusion of knowledge. Created in 1925, as a successor to the Trinity College Press, the Duke University Press continued the publication of the *South Atlantic Quarterly*, published at Trinity College since 1902, and in 1926 revived the *Hispanic-American Historical Review*, which had been founded and published from 1918 to 1922 by a group of scholars interested in Hispanic America. In 1929 *American Literature* was begun with the cooperation of the American Literature Group of the Modern Language Association. This journal was followed in 1931 by *Ecological Monographs*, and in 1932, *Character and Personality* (since 1945 the *Journal of Personality*). In 1935 the Press began the publication of the *Duke Mathematical Journal*; in 1937, the *Journal of Parapsychology*. Since 1948, it has published *Ecology*, the official journal of the Ecological Society of America. The Law School of Duke University publishes *Law and Contemporary Problems*, *The Duke Bar Journal*, and *The Journal of Legal Education*.

The Press, since its organization, has published more than two hundred and fifty volumes, and has thus made public the fruits of scholarly research of the Duke faculty and of scholars elsewhere. In the broadest sense, the policy of the Press is to make available to the public any scholarly work that merits publication though special attention is given to works in domains of knowledge cultivated by the University.

Visiting Scholars

The libraries and, to the extent practicable, other facilities of Duke University will be made available to faculty members of colleges and universities who wish to spend a period of time on the campus in pursuit of their scholarly interests. No fees will be charged such visitors unless they wish to participate in activities for which a special fee is assessed. Room and board may be arranged for at the regular rates in the dormitories and dining halls. Dormitory space is usually available during the summer months. Inquiries concerning residence for visiting scholars should be directed to the Dean of the Graduate School of Arts and Sciences.

Appointments Office

Duke University maintains an active appointments office which has steadily been placing students in teaching and industrial positions. The services of this office are available without charge to graduate students. Those who are interested in securing employment through the Appointments Office, or those who wish to have available for their own use in securing employment a complete file containing their academic record and pertinent recommendations, should register in this office.

Graduate Study in the Summer Session

The Summer Session of Duke University is divided into two terms. In 1957 the first term will begin on June 11 and will end on July 17. The second term will begin on July 19 and will end on August 24.

Graduate students who wish to work toward advanced degrees in the Summer Session, particularly in chemistry, economics, education, English, history, mathematics, religion, sociology, Spanish, and zoology will find a selection of courses offered by members of the Duke faculty and by visiting professors. Other departments ordinarily offering work leading to the A.M. degree are botany, political science, and psychology. Thesis research for advanced graduate students is available also in other departments, such as botany, forestry, and physics.

Requirements for admission to the Graduate School are detailed above. Students who wish to be admitted to the Graduate School for work in the Summer Session should make application to the Dean of the Graduate School, as well as to the Director of the Summer Session, and should return the completed application, with supporting documents, before June 1, for admission to the first term, and before July 10, for admission to the second term.

REGULATIONS REGARDING SUMMER WORK. (a) No graduate student may register for more than six semester hours of credit in one Summer Session term. (b) All of the work required for the A.M., M.A.T., or M.Ed. degree must be completed within six years of the date of beginning. No work completed earlier than this time limit can be accepted either for course or residence credit. (c) Not more than one year of summer work can be accepted toward the residence requirements for the Ph.D. or Ed.D. degrees. See p. 40 for a definition of a year's residence credit earned in Summer Sessions. Students who complete in a summer session the work required by the University for the Master's degree will be granted the degree at the end of the summer.

A Summer Session Bulletin containing information about graduate courses may be obtained by addressing a request to the DIRECTOR OF THE SUMMER SESSION, Duke University, Durham, N. C.

Courses of Instruction



Most courses listed in this Bulletin are given on the West Campus. The letter (E) following the description means that the course is offered on the East Campus. In general, courses with odd numbers are offered in the first semester, those with even numbers in the second semester. The courses listed under the headnote to the several departments are those planned at the date of printing the Bulletin. Occasional changes may later be necessary.

AESTHETICS, ART, AND MUSIC

PROFESSOR PATRICK, CHAIRMAN; ASSOCIATE PROFESSORS HALL, MARKMAN, AND SUNDERLAND

AESTHETICS

FOR SENIORS AND GRADUATES

No graduate degree is offered in this department, but the following courses are suggested as possible minors for students majoring in history, literature, philosophy, religion, psychology, or sociology, or in any other interested departments.

In 1957-58 the courses planned are Aesthetics 221-222 and Art 215, 216, 233, 234, and 240.

221-222. HISTORY OF AESTHETICS.—Theories of art and beauty in the western world from antiquity to the present. Some attention will be given the developed theories of aesthetics in the Far East. 6 s.h. (E) PROFESSOR PATRICK

ART

FOR SENIORS AND GRADUATES

215. RELIGIOUS ART OF THE ANCIENT NEAR EAST.—A specialized study of the development of art, particularly architecture and sculpture, as the material expression of religious ideas in Egypt, Mesopotamia, and in part of Syria and Palestine, to the Persian conquest. 3 s.h. (w) ASSOCIATE PROFESSOR MARKMAN

216. RELIGIOUS ART OF THE CLASSICAL WORLD.—A specialized study of the religious art, particularly architecture and sculpture, of Greece and Rome, with special emphasis on the monuments in the Near East. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

217. AEGEAN ART.—A study of the problems of Aegean art as the forerunner of Greek art and in relation to the contemporary civilization of the eastern Mediterranean world. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

218. EARLY GREEK ART.—A study of the problems of the origin and development of Greek art in the Geometric period to the end of the Archaic. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

233. EARLY MEDIAEVAL ARCHITECTURE.—The development of religious architecture from the time of Constantine to the end of the First Romanesque style in the third quarter of the eleventh century. 3 s.h. (E)

ASSOCIATE PROFESSOR SUNDERLAND

234. ROMANESQUE SCULPTURE.—The development of sculpture in western Europe from the early Christian period through the culmination of Romanesque art in the west portal of Chartres Cathedral. 3 s.h. (E)

ASSOCIATE PROFESSOR SUNDERLAND

240. ARCHITECTURE OF NORTH AMERICA.—A study illustrating the transplantation of European architectural customs since the sixteenth century; the

time-lag in transit and acceptance of later European developments; the gradual assumption of confident independence in design; and the emergence of international leaders in the United States. 3 s.h. (E)

ASSOCIATE PROFESSOR HALL

DIVISION OF ANCIENT LANGUAGES AND LITERATURE

PROFESSORS CLARK, ROGERS, AND STINESPRING; ASSOCIATE PROFESSORS ROSE, TRUESDALE, AND WAY; ASSISTANT PROFESSOR BROWNLEE

GREEK

No graduate degree is presently offered in Greek.

For 1957-58 the course planned is 257.

FOR SENIORS AND GRADUATES

201-202. GREEK TRAGEDY.—6 s.h.

ASSOCIATE PROFESSOR TRUESDALE

257. SOCIAL AND CULTURAL HISTORY OF THE HELLENISTIC WORLD FROM ALEXANDER TO AUGUSTUS.—Lectures, readings, and discussions. This course will not be separately credited without the sequel, Latin 258. 3 s.h.

PROFESSOR ROGERS

Graduate students of Duke University may attend the American School of Classical Studies in Athens, Greece, without charge for tuition, and they are eligible to compete for the fellowships that are offered annually by the School. These consist of two fellowships in Greek archaeology, and one in the language, literature, and history of ancient Greece, each with a stipend of \$2,000. They are awarded mainly on the basis of examinations held in the beginning of February of each year.

LATIN AND ROMAN STUDIES

No graduate degree is presently offered in Latin.

The course planned for 1957-58 is 258.

FOR SENIORS AND GRADUATES

211-212. ROMAN ORATORY.—A survey of the history of Roman oratory, centering about the *Brutus* of Cicero and Tacitus' *Dialogus*. 6 s.h.

PROFESSOR ROGERS

258. SOCIAL AND CULTURAL HISTORY OF THE GRAECO-ROMAN WORLD.—The Roman Empire as the trustee of Hellenism and Christianity, and its own original contributions to modern civilization; lectures, readings, and discussions. This course continues Greek 257 and will not be separately credited. 3 s.h.

PROFESSOR ROGERS

SEMITICS

The courses planned for 1957-58 are 201-202, 207-208, 304, 305.

FOR SENIORS AND GRADUATES

201-202. FIRST HEBREW.—The principles and structure of the Hebrew language, with translations of selected Old Testament narratives. 6 s.h.

PROFESSOR STINESPRING

207-208. SECOND HEBREW.—Samuel or Kings the first semester; Isaiah the second. 6 s.h.

ASSISTANT PROFESSOR BROWNLEE

FOR GRADUATES

304. ARAMAIC.—A study of the Aramaic portions of the Old Testament and selected passages from the Targums, Midrashes, and Talmuds. 3 s.h.

PROFESSOR STINESPRING

305. THIRD HEBREW.—A study of late Hebrew prose, with readings from Chronicles, Ecclesiastes, and the Mishnah. Hours to be arranged. 3 s.h.

PROFESSOR STINESPRING

307. SYRIAC.—A study of the script and grammar, with readings from the Syriac New Testament and other early Christian documents. Some knowledge of Hebrew and Aramaic is prerequisite. 3 s.h.

PROFESSOR STINESPRING

309. HISTORY OF THE ANCIENT NEAR EAST.—A survey of the early civilizations of Egypt, Palestine, Syria, and Mesopotamia in the light of Biblical archaeology. 3 s.h.

PROFESSOR STINESPRING

RELATED COURSES IN OTHER DEPARTMENTS

Philosophy 217, Religion 217, 218, 220, 313, 316, 318.

Under the terms of a co-operative agreement graduate students of Duke University may, with the approval of the chairman of their major department, take any graduate course offered by the Departments of Greek and Latin of the University of North Carolina by the payment of a nominal fee. A list of these courses will be sent upon request.

BOTANY

PROFESSOR OOSTING, CHAIRMAN—102A BIOLOGY BUILDING; PROFESSOR KRAMER, DIRECTOR OF GRADUATE STUDIES—04 BIOLOGY BUILDING; PROFESSORS ANDERSON, BLOMQUIST, AND HARRAR; ASSOCIATE PROFESSORS BILLINGS, HUMM, NAYLOR, AND PERRY; ASSISTANT PROFESSORS JOHNSON AND PHILPOTT; DR. CULBERSON

Graduate work in the Department of Botany is offered leading to the A.M. and Ph.D. degrees. Before undertaking graduate study in botany a student should have had in his undergraduate program at least 12 semester hours of botany beyond an elementary course, and related work in biological sciences. Some work in chemistry and physics will be desirable; and for some phases of botanical study, a necessity. The student's graduate program is planned to provide a broad basic training in the various fields of botany, plus intensive specialization in the field of the research problem.

The courses planned for 1957-58 are 203, 204, 218, 221, 224, 225-226, 254, 255, 257, 258, 305, 359-360, 397-398.

FOR SENIORS AND GRADUATES

202. GENETICS.—The principles of heredity, their cytological basis, and their bearing on other fields of biology. Laboratory work involves experimental breeding of the fruit fly and interpretation of data from the breeding of plants. Offered in alternate years. Prerequisite: one year of botany, zoology, or equivalent, and college algebra. 4 s.h.

ASSOCIATE PROFESSOR PERRY

203. PLANT CYTOLOGY.—A study of the structure and organization of plant cells in relation to growth, reproduction, and especially heredity. Offered in alternate years. Prerequisite: one year of botany. 4 s.h.

PROFESSOR ANDERSON

204. ADVANCED PLANT ANATOMY.—A study of vegetative and reproductive tissue of vascular plants including selection and preparation of fresh plant materials. An analysis of some of the significant literature bearing upon function, development, and phylogeny. Prerequisite: Botany 55 or equivalent. 4 s.h. (E)

ASSISTANT PROFESSOR PHILPOTT

216. BOTANICAL MICROTECHNIQUE.—Methods and theory in preparation of plant tissues for temporary mounts and permanent microscopical slides. Prerequisite: Two years of natural science. 4 s.h. (E)

ASSISTANT PROFESSOR PHILPOTT

218. ILLUSTRATIVE TECHNIQUES.—A study of botanical illustrative methods, including theory and use of the microscope, microscopical measurements, drawing, photomicrography, botanical photography, darkroom procedures, lantern slides, and the preparation of illustrative material for publication. Prerequisites: two semesters of botany, zoology or forestry. 2 s.h.

PROFESSOR ANDERSON

221. INTRODUCTORY MYCOLOGY.—Field and laboratory study of the vegetative and reproductive structures of the fungi and slime molds. Methods of collection, isolation, propagation, and identification of the major orders as represented in the local flora. Prerequisite: A year of biological science. 4 s.h.

ASSISTANT PROFESSOR JOHNSON

225-226. SPECIAL PROBLEMS.—Students with adequate training may do special work in the following fields. Credits to be arranged.

(a) MYCOLOGY AND PLANT PATHOLOGY. ASSISTANT PROFESSOR JOHNSON

- (b) CYTOLOGY. ASSOCIATE PROFESSOR ANDERSON
 (c) ECOLOGY. PROFESSOR OOSTING AND ASSOCIATE PROFESSOR BILLINGS
 (d) GENETICS. ASSOCIATE PROFESSOR PERRY
 (e) MORPHOLOGY AND ANATOMY OF HIGHER PLANTS.
 PROFESSOR HARRAR; ASSISTANT PROFESSOR PHILPOTT
 (f) MORPHOLOGY AND TAXONOMY OF LOWER GROUPS.
 PROFESSORS BLUMQUIST AND ANDERSON; DR. CULBERSON
 (g) PHYSIOLOGY. PROFESSOR KRAMER AND ASSOCIATE PROFESSOR NAYLOR
 (i) TAXONOMY OF HIGHER GROUPS. PROFESSOR BLUMQUIST
 (m) MICROBIOLOGY. ASSOCIATE PROFESSOR HUMM

252. PLANT METABOLISM.—The physicochemical processes and conditions underlying the physiological processes of plants. Prerequisite: Botany 151 or equivalent; organic chemistry recommended. 3 s.h. ASSOCIATE PROFESSOR NAYLOR

254. PLANT WATER RELATIONS.—A study of factors affecting the availability of water, its absorption and use in plants, and the effects of water deficits on plant processes. Assigned readings, reports, and lectures. Prerequisite: Botany 151 or equivalent. 3 s.h. PROFESSOR KRAMER

255. ADVANCED TAXONOMY.—A study of the historical background of plant taxonomy, modern concepts and systems of classifications, nomenclatorial problems, and the taxonomy of specialized groups. Prerequisite: two years of botany, including Botany 52 or equivalent. 4 s.h. PROFESSOR BLUMQUIST

256. COMMUNITY ANALYSIS AND CLASSIFICATION.—The development of concepts and methods in synecology and their present application to the study of plant communities. Prerequisite: Botany 156 or equivalent. 3 s.h. PROFESSOR OOSTING

257. PRINCIPLES OF PLANT DISTRIBUTION.—Interpretation of the floristic and ecological plant geography of the world's vegetation. Prerequisite: Botany 156 or equivalent. 3 s.h. ASSOCIATE PROFESSOR BILLINGS

258. PHYSIOLOGY OF GROWTH AND DEVELOPMENT.—Consideration of the internal factors and processes of new protoplasm and its differentiation at the cellular, tissue, and organ level in plants. Prerequisites: Botany 151 or equivalent; organic chemistry recommended. 3 s.h. ASSOCIATE PROFESSOR NAYLOR

259. ENVIRONMENTAL MEASUREMENTS.—Methods of obtaining and evaluating climatological data for ecological purposes with special attention to instrumentation and microclimate. Prerequisite: Botany 156 or equivalent. 3 s.h. ASSOCIATE PROFESSOR BILLINGS

305. VEGETATION OF NORTH AMERICA.—Distribution and limits of the major plant communities, a study in ecological plant geography. Prerequisite: Botany 156 or equivalent. 3 s.h. PROFESSOR OOSTING

310. STRUCTURE AND CLASSIFICATION OF BRYOPHYTES AND PTERIDOPHYTES.—The morphological and systematic characteristics of mosses, liverworts, ferns, and fern allies. 4 s.h. PROFESSOR BLUMQUIST

311. STRUCTURE AND CLASSIFICATION OF ALGAE.—The morphological and ecological characteristics of the common freshwater and marine species and the principles underlying their classification. Collecting, identification, and the making of permanent microscopical preparations. 4 s.h. PROFESSOR BLUMQUIST

359-360. RESEARCH IN BOTANY.—Individual investigation in the various fields of botany. Credits to be arranged.

PROFESSORS ANDERSON, BLUMQUIST, HARRAR, KRAMER, OOSTING;
 ASSOCIATE PROFESSORS BILLINGS, HUMM, NAYLOR, AND PERRY;
 ASSISTANT PROFESSORS JOHNSON AND PHILPOTT

397-398. GENERAL BOTANICAL SEMINAR.—One hour per week throughout the year. Required of all graduates majoring in botany. 2 s.h.

PROFESSORS ANDERSON, BLUMQUIST, HARRAR, KRAMER, OOSTING;
ASSOCIATE PROFESSORS BILLINGS, HUMM, NAYLOR, AND PERRY;
ASSISTANT PROFESSORS JOHNSON AND PHILPOTT

FOREST BOTANY

FOR SENIORS AND GRADUATES

224. FOREST PATHOLOGY.—Infectious and non-infectious diseases of forest trees, and related deterioration of forest products. Field and laboratory study of symptoms, etiology, and control. Prerequisites: Botany 1 and 2. 3 s.h.

ASSISTANT PROFESSOR JOHNSON

253. DENDROLOGY.—Nomenclature, classification, and identification of woody plants with special reference to species indigenous to southeastern United States and other important forest regions of temperate North America. Laboratory and field work. Prerequisite: one year of botany. 3 s.h.

PROFESSOR HARRAR

RELATED COURSES IN OTHER DEPARTMENTS

This related course may be counted toward a major in botany: Forestry 257.

CHEMISTRY

PROFESSOR SAYLOR, CHAIRMAN—115 CHEMISTRY BUILDING, PROFESSOR BRADSHAW, DIRECTOR OF GRADUATE STUDIES—124 CHEMISTRY BUILDING; PROFESSORS BIGELOW, BROWN, GLOCKLER (VISITING LECTURER), GROSS, HAUSER, HILL, HOBBS, AND VOSBURGH;
ASSISTANT PROFESSORS KRIGBAUM, POIRIER, STROBEL, AND WILDER

In the Department of Chemistry graduate work is offered leading to the A.M. and Ph.D. degrees. Before undertaking a graduate program in chemistry, a student should have taken an undergraduate major in chemistry along with related work in mathematics and physics.

Graduate courses in the department are designed to provide a broad basic training in the fields of inorganic, organic, analytical, and physical chemistry. An important requirement for the Ph.D. degree is the successful completion, under the direction of a member of the Staff, of a research program leading to the solution of an original problem. The choice of the research problem, for either the A.M. or the Ph.D. degrees, will determine the field of advanced specialization.

For 1957-58 the courses planned are 206, 215, 216, 233, 234, 251, 261-262, 271, 275, 276, 303, 304, 341, 342, 350, 351-352, 360, 363, 365-366, and 373-374.

FOR SENIORS AND GRADUATES

206. ELEMENTS OF THEORETICAL CHEMISTRY.—A course in the general principles of physical chemistry for students who do not present credit in calculus. Credit is not given for both 206 and 261-262. Three recitations and three laboratory hours. Prerequisites: Chemistry 70, 151, 152, Physics 8 s.h., and Mathematics 6 s.h. With the permission of the Director of Graduate Studies, graduate students from other departments may offer other advanced science courses in lieu of some of these prerequisites. 4 s.h.

PROFESSOR SAYLOR

215. ADVANCED INORGANIC CHEMISTRY.—A study of modern theories of valence and molecular structure and inorganic compounds, particularly the less common types. Prerequisites: Chemistry 261-262, or 206. 3 s.h.

PROFESSORS VOSBURGH AND HILL

216. NUCLEAR CHEMISTRY.—Types and elementary theory of nuclear reactions and the considerations involved in the use of tracers in chemical studies. Prerequisite: Chemistry 261-262; 262 may be taken concurrently. 2 s.h. PROFESSOR HILL

233. INSTRUMENTAL ANALYSIS.—A study of physical measuring instruments in chemical analysis with special attention to optical instruments. One lecture and three laboratory hours per week. Prerequisites: Chemistry 70 and one year of physics. 2 s.h.
ASSISTANT PROFESSOR STROBEL

234. CHEMICAL INSTRUMENTATION.—Discussion of physico-chemical principles as applied to instrumental methods of analysis, illustrated by laboratory experiments, with emphasis on methods involving electrical techniques. One lecture and three laboratory hours per week. Prerequisites: Chemistry 70 and either 261-262 or 206; either of the latter may be taken concurrently. 2 s.h.
ASSISTANT PROFESSOR STROBEL

251. QUALITATIVE ORGANIC ANALYSIS.—Systematic identification of organic compounds, including a study of solubilities and classification reactions. One lecture and three or six laboratory hours per week. Prerequisites: Chemistry 70 and 151, 152. 2 or 3 s.h.
PROFESSOR HAUSER

252. ADVANCED ORGANIC PREPARATIONS.—A laboratory course designed to supplement the student's knowledge of fundamental organic processes by a selected group of laboratory exercises accompanied by oral discussions of techniques and theories pertinent to the experiments. Five hours laboratory and lecture, with lectures in alternate weeks. Prerequisites: Chemistry 70 and 151, 152. 2 s.h.
PROFESSOR BROWN

261-262. PHYSICAL CHEMISTRY.—Fundamentals of general theoretical chemistry illustrated by selected laboratory experiments. Three recitations and three laboratory hours. Prerequisites: Chemistry 70, 151, 152, Physics 8 s.h., Mathematics 51, 52 or equivalent. 8 s.h.
PROFESSOR HOBBS

271. INTRODUCTION TO RESEARCH.—Lectures on the use of chemical literature, research methods, recording and publication of results, and other topics. One lecture per week. 1 s.h.
PROFESSOR BROWN

275, 276. RESEARCH.—The aim of this course is to give instruction in methods used in the investigation of original problems. Individual work and conferences. 2 to 6 s.h..
PROFESSORS BIGELOW, BRADSHAW, BROWN,
GROSS, HAUSER, HILL, HOBBS, SAYLOR,
AND VOSBURGH; ASSISTANT PROFESSORS
KRIGBAUM, STROBEL, AND WILDER

FOR GRADUATES

303. THERMODYNAMICS.—Fundamental laws of thermodynamics and their applications to chemistry and physics. 3 s.h.
PROFESSORS HOBBS AND SAYLOR

304. PHYSICAL CHEMISTRY OF REACTIONS.—The theoretical aspects of reaction kinetics, chemical equilibrium, atomic and molecular forces, and the relation of these to chemical reactions are considered. Prerequisite: Chemistry 261-262. 3 s.h.
PROFESSORS HILL AND HOBBS

341, 342. ADVANCED ORGANIC CHEMISTRY.—Discussion of the theories of organic chemistry with special reference in the first semester to the mechanism of reactions and in the second semester to the synthesis of some of the more complex compounds such as vitamins, hormones, and alkaloids. Undergraduates are admitted to this course only by permission of the Director of Undergraduate Studies. Prerequisite: Chemistry 151, 152. 4 s.h.
PROFESSORS BIGELOW AND HAUSER

350. ORGANIC REACTIONS.—A study of the scope and limitations of the more important types of reactions of organic chemistry from the point of view of their practical use in the synthesis of organic compounds. Lectures and discussion. Prerequisites: Chemistry 251 and 341. 2 s.h.
PROFESSOR BRADSHAW

351-352. ADVANCED SYNTHETIC ORGANIC CHEMISTRY.—Recent advances in certain selected fields, such as the mechanism of organic reactions, medicinals, dyes, perfumes, terpenes, and alkaloids, will be discussed. The emphasis will be placed on structure studies and synthetic methods. Lecture or seminar one hour each week. 2 s.h.
PROFESSORS BIGELOW AND HAUSER

360. POLYMER CHEMISTRY.—A survey of the methods of preparation of high-molecular-weight organic compounds and a study of the properties characteristic of macromolecules in solution and in the solid state. Prerequisite: Chemistry 303. 2 s.h. ASSISTANT PROFESSOR KRIGBAUM

363. SPECIAL TOPICS IN PHYSICAL AND INORGANIC CHEMISTRY.—Various topics in physical and inorganic chemistry which are of special interest to the staff or students are considered, such as absorption and scattering of light, dielectric phenomena, electrode processes, electrolyte theory, ion exchange, molecular structure, solubility, and valence theory. Prerequisites: Chemistry 261-262, 303 and 304. 2 s.h. PROFESSORS GLOCKLER, HILL, HOBBS, SAYLOR, AND VOSBURGH; ASSISTANT PROFESSOR STROBEL

365-366. CHEMICAL PHYSICS, STATISTICAL THEORY.—General introduction to statistical mechanics and applications to chemical problems; solution theory, reaction velocity, changes of state, quantum statistics and the metallic state. Lectures, conferences, and assigned problems. 6 s.h. ASSISTANT PROFESSOR POIRIER

367-368. CHEMICAL PHYSICS, QUANTUM THEORY OF ATOMIC AND MOLECULAR STRUCTURE.—Theory of atomic and molecular forces and the structure of matter. Lectures, conferences, and assigned problems. 6 s.h. ASSISTANT PROFESSOR POIRIER

373, 374. SEMINAR.—Required of all graduate students in chemistry. One hour a week discussion. 2 s.h. PROFESSORS BIGELOW, BRADSHAW, BROWN, GROSS, HOBBS, SAYLOR, AND VOSBURGH; ASSISTANT PROFESSORS KRIGBAUM, STROBEL, AND WILDER

RELATED COURSES IN OTHER DEPARTMENTS

Biochemistry and Nutrition M241, M242, M243-244, M341, M343-344, M349-350, M351; and Microbiology M322.

CIVIL ENGINEERING

PROFESSOR ROWE, CHAIRMAN—121 ENGINEERING BUILDING; PROFESSOR WILLIAMS; ASSISTANT PROFESSOR GARDNER

The Department of Civil Engineering offers graduate work leading to the Master of Science Degree. A broad approach is emphasized and fundamental principles are stressed. Narrowly specialized courses are not offered. Each graduate student therefore engages in a program that is designed to give him technical competence in mathematics, physics, or chemistry, and the civil engineering sciences. A student may concentrate on one of the following fields of civil engineering: hydraulic engineering, soils engineering, or structural engineering.

A minimum prerequisite to the graduate program will be mathematics through linear differential equations, mechanics of materials, structural theory and design, fluid mechanics, and location procedure.

COURSES

CE 201. THEORETICAL AND APPLIED MECHANICS.—Introduction to the theory of elasticity, vibrations analysis, and hydrodynamics. (Same course as ME 201.) 3 s.h. PROFESSORS ROWE AND MACDUFF

CE 202. ADVANCED MECHANICS OF MATERIALS AND EXPERIMENTAL STRESS ANALYSIS.—The analysis of stress and strain in deformable bodies, correlation of theory with data from experiment. Photoelasticity. Strain gages. Similitude. 3 s.h. PROFESSOR ROWE

CE 231. STRUCTURAL THEORY AND ANALYSIS.—The application of the fundamental theories of structural action to the design and analysis of structural members. The Gauss Scheme. Specifications. Planning of CE projects. 3 s.h. PROFESSOR ROWE

CE 232. REINFORCED CONCRETE THEORY.—Design and analysis of reinforced concrete members including plates and shells. Prestressed and poststressed concrete members. 3 s.h. ASSISTANT PROFESSOR GARDNER

CE 235. FOUNDATION ENGINEERING.—The theory and application of soil mechanics to the design and analysis of foundations, subsurface structures, and earth works. 3 s.h. ASSISTANT PROFESSOR GARDNER

CE 242. HYDRAULIC ENGINEERING.—Fundamental principles of flow, effects of gravity, viscosity, compressibility, and surface tension of fluid motion in closed conduits and open channels; surface and form resistance; hydraulic similitude. Fundamentals of applied hydrology. 3 s.h. PROFESSOR WILLIAMS

CE 297-298. THESIS.—Research relating to selected fields of study involving original work extending over two terms. A student with the proper background may carry on research under the direction of the staff in one of the following fields. Thesis credit only. 6 s.h.

- a. Foundation Engineering: ASSISTANT PROFESSOR GARDNER
- b. Hydraulic Engineering: PROFESSOR WILLIAMS
- c. Structural Engineering: PROFESSOR ROWE

ECONOMICS

PROFESSOR HOOVER, CHAIRMAN—320 LIBRARY; PROFESSOR SPENGLER, DIRECTOR OF GRADUATE STUDIES—322 LIBRARY; PROFESSORS BLACK, DE VYVER, HANNA, HUMPHREY, LONDON, RATCHFORD, SIMMONS, AND SMITH; ASSOCIATE PROFESSORS CARTTER AND MCKENZIE; ASSISTANT PROFESSOR DEWEY

Graduate work in the Department of Economics is offered leading to the A.M. and Ph.D. degrees. In order to enter upon graduate work in economics a student should have completed with satisfactory grades at least 12 semester hours of undergraduate work in economics, including 6 hours of Principles of Economics. Among the undergraduate courses of distinct advantage to the graduate student specializing in economics are: General Accounting, Elementary Statistics, and basic courses in philosophy, psychology, the social sciences other than economics, and mathematics.

The fields from among which students working toward a Ph.D. degree in economics may choose for purposes of concentration are: Economic Theory, History of Economic Thought, Demographic and Economic Growth and Change, Economic History, Economic Systems, Industrial and Organizational Economics, International Trade, Labor Economics, Mathematical and Econometrical Economics, Money and Banking, Public Finance, Statistics and National Income, and (occasionally) especially arranged fields. The requirements for the Ph.D. degree in economics normally include (among other things) completion of the work (or its equivalent) making up the first two of these fields, together with two additional fields; Economics 300 and a course in each of four other fields; Economics 237-238, or equivalent work; and three or four courses in one or two minor fields. When circumstances warrant, these requirements are subject to modification. Students electing Statistics and National Income as a field must complete courses in mathematical statistics and probability, or equivalents.

For 1957-58 the following courses are planned for graduate students in economics and related fields: 237, 238, 240, 243, 244, 300, 301, 304, 305, 313, 314, 317 or 319, 320, 365, 386. For 1958-59 the following courses are planned: 237, 238, 240, 243, 244, 300, 301, 313, 314, possibly 317 and 319, 320, 329, 330, 331, 355, 358, 365, 386.

FOR SENIORS AND GRADUATES*

233. STATE AND LOCAL FINANCE.—A study of expenditures, taxation, and financial administration in state and local governments with emphasis on current problems. Special attention will be given to research methods and materials and to the financial relations between state and local governments. 3 s.h.

PROFESSOR RATCHFORD

237-238. STATISTICAL METHODS.—A study of statistical methods appropriate for dealing with problems in business and the social sciences. In addition to developing more thoroughly the subjects considered in *Business Statistics*, the following methods will be considered: multiple, partial, and curvilinear correlation; curve fitting; probability; sampling distributions; and statistical inference. Prerequisite: Economics 138 or consent of the instructor. Either semester may be taken for credit. 6 s.h. PROFESSOR HANNA

* Graduate students in economics normally will not receive credit for courses 233, 256, and 262. These courses may be taken for credit by non-economics graduate students, with the consent of the instructor.

240. NATIONAL INCOME.—A critical survey of the conceptual framework and structure of national income and its components, the reliability of national income estimates, and their use in analyzing questions of economic policy. 3 s.h.

PROFESSOR HANNA

243. MATHEMATICAL ECONOMICS.—A systematic survey of mathematical economic theory. The principal topics are conditions of static equilibrium, including stability conditions, dynamic models using difference equations, and linear production models of input-output analysis and activity analysis. 3 s.h.

ASSOCIATE PROFESSOR MCKENZIE

244. INTRODUCTION TO ECONOMETRICS.—The theory of statistical model building in economics. The identifiability of parameters in a system of linear difference equations. The statistical estimation of parameters. The design of dynamic economic models. 3 s.h.

ASSOCIATE PROFESSOR MCKENZIE

256. LABOR LEGISLATION AND SOCIAL INSURANCE.—A study of the relations of the state to labor problems with special reference to remedial legislation, to interference in labor disputes, and to social insurance. 3 s.h.

PROFESSOR DE VYVER

262. TRADE UNIONISM AND COLLECTIVE BARGAINING.—An intensive survey of the trade union as an economic institution is followed by a study of the principles and problems of union-management relationship as found in collective bargaining. 3 s.h.

PROFESSOR DE VYVER

275-276. ADVANCED INDUSTRIAL ACCOUNTING AND MANAGEMENT.—A comprehensive examination of the rationale and techniques of control methods used in industry. Emphasis is laid on a critical evaluation of the practices followed by job-order, process, and standard costing, as well as the economics of overhead costs. Prerequisites: Economics 171-172 and permission of the Department. 6 s.h.

PROFESSOR BLACK

FOR GRADUATES

300. INTRODUCTORY MATHEMATICAL ECONOMICS.—This course is designed to acquaint the student with the role and the use of mathematical and related methods in economic analysis. 3 s.h.

ASSOCIATE PROFESSOR MCKENZIE

301. ECONOMIC ANALYSIS.—Review of contemporary theory relating to consumer behavior, production, the firm, price formation, income distribution, and equilibrium. 3 s.h.

PROFESSOR SPENGLER

304, 305. SEMINAR IN MONEY AND BANKING.—3 s.h. each.

PROFESSOR SIMMONS

311-312. HISTORY OF POLITICAL ECONOMY.—A detailed review of the development of economic theory, the tools of economic analysis, and economics as a science, together with an analysis of the circumstances affecting this development. Period covered: pre-Christian times through 1936. 6 s.h.

PROFESSOR SPENGLER

313-314. SEMINAR IN ECONOMIC THEORY.—The course consists of directed research in economic theory. The primary purpose is the correction of authoritative eclecticism and its replacement by individually integrated theory. Prerequisite: Economics 301 or its equivalent. 6 s.h.

PROFESSOR HOOVER

315. SEMINAR IN ECONOMIC SYSTEMS.—3 s.h.

PROFESSOR HOOVER

316. SEMINAR IN ECONOMIC FUNCTIONS OF THE STATE.—3 s.h.

PROFESSOR HOOVER

317. SEMINAR IN DEMOGRAPHIC, POPULATION, AND RESOURCE PROBLEMS.—3 s.h.

PROFESSOR SPENGLER

318. GENERAL SEMINAR IN ECONOMICS.—All graduate students with economics as a major subject are members of this seminar. Reports of progress in research will be made, and there will be lectures and critical discussion by members of the Department. Year course. No credit.

ALL MEMBERS OF THE GRADUATE STAFF

319. SEMINAR IN THE THEORY AND THE PROBLEMS OF ECONOMIC GROWTH AND CHANGE.—3 s.h. PROFESSOR SPENGLER

320. SEMINAR IN TRADE CYCLE, EMPLOYMENT, AND INCOME THEORY.—3 s.h. ASSOCIATE PROFESSOR CARTER

329. FEDERAL FINANCE.—A study of the expenditures, revenues, and financial administration of the government of the United States, with emphasis on current problems. Special attention given to budgetary procedure, corporate and individual income taxes, and the financial relations between federal and state governments. Prerequisite: Economics 187 or consent of instructor. 3 s.h. PROFESSOR RATCHFORD

330. SEMINAR IN PUBLIC FINANCE.—3 s.h. PROFESSOR RATCHFORD

331. SEMINAR IN ECONOMIC HISTORY.—3 s.h. PROFESSOR SMITH

355. SEMINAR IN LABOR ECONOMICS.—3 s.h. PROFESSOR DE VYVER

358. SEMINAR IN LABOR MARKET AND RELATED ANALYSIS.—3 s.h. ASSOCIATE PROFESSOR CARTER

365. SEMINAR IN INTERNATIONAL TRADE.—3 s.h. PROFESSOR HUMPHREY

386. SEMINAR IN LATIN-AMERICAN ECONOMIC PROBLEMS.—3 s.h. PROFESSOR SMITH

389. SEMINAR IN INDUSTRIAL AND GOVERNMENTAL PROBLEMS.—3 s.h.

401. SEMINAR ON THE BRITISH COMMONWEALTH.—3 s.h. PROFESSORS SPENGLER, COLE, AND HAMILTON

RELATED COURSES IN OTHER DEPARTMENTS

Courses comprising a candidate's minor may be selected from fields of forestry, history, mathematics, philosophy, physics, political science, psychology, and sociology and anthropology, or from an area that complements the candidate's area of research interests in economics.

EDUCATION

PROFESSOR CARTWRIGHT, CHAIRMAN—08D WEST DUKE BUILDING; PROFESSOR BOLMEIER, DIRECTOR OF GRADUATE STUDIES—08B WEST DUKE BUILDING; PROFESSORS CARR AND HURLBURT; ASSOCIATE PROFESSORS EASLEY, MCLENDON, PETTY, RUDISILL, STUMPF, AND WEITZ; ASSISTANT PROFESSORS COLVER, GEHMAN AND REYNOLDS

Graduate work in Education is offered leading to the A.M., the M.Ed., the M.A.T., and the Ed.D. degrees. For each of these degrees there are specific requirements and prerequisites, all of which may be found stated in detail in this *Bulletin*, pp. 33-45. Departmental requirements and prerequisites for all of these degrees may be obtained from the Director of Graduate Studies. The courses planned for 1957-58 are: 201, 203, 204, 210, 215-216, 217, 224, 225, 226, 228, 234, 235, 240, 241, 242, 243, 244, 246, 248, 266, 276, 334-335.

FOR SENIORS AND GRADUATES

201. TEACHING AND SUPERVISION OF ARITHMETIC.—This course gives special attention to the number system, the fundamental operations (with whole numbers, fractions, and decimals), percentage, and measurements. The course will consider the meaning theory, method of teaching, problem solving, evaluation, practice and drill, and selection and gradation of arithmetical contents. The course is designed for teachers and supervisors in the elementary school. 3 s.h. (E)

ASSOCIATE PROFESSOR PETTY

203. PRINCIPLES OF SCHOOL ADMINISTRATION.—The fundamental facts and procedures of school administration, an analysis of the problems and policies of the organization and direction of a local school system, and the functions of the various school officials. Prerequisites: Education 103 and 88, or six semester hours of equivalent work in education. 3 s.h. (E)

PROFESSORS BOLMEIER AND HURLBURT
AND ASSOCIATE PROFESSOR STUMPF

205. CURRICULUM PROBLEMS IN SECONDARY EDUCATION.—A consideration of the aims and objectives of secondary-school subjects, emphasizing practical problems of curriculum-making in the high school. 3 s.h. (E)

PROFESSOR CARTWRIGHT

215-216. SECONDARY EDUCATION: PRINCIPLES AND INTERNSHIP.—A one-semester course, the first half of which is devoted to an intensive study of principles, curriculum, and methods in secondary education. The second half consists of supervised internship in public junior or senior high schools. With permission of the Department a full semester may be devoted to the internship and the associated course work offered as a three-hour weekly seminar. Students carrying this course for credit toward a master's degree will be required to take six hours of senior or graduate work in addition to the normal degree requirements. 9 s.h. (E)

PROFESSORS CARTWRIGHT AND HURLBURT

224. TEACHING THE SOCIAL STUDIES IN ELEMENTARY SCHOOLS.—This course will treat objectives, curriculum trends, methods, and materials in elementary-school social studies. Topics to receive emphasis include unit-planning, use of the textbook, the reading program, using community resources, audio-visual materials, dealing with controversial issues, teaching time and place concepts, and evaluation. Opportunity will be provided for teachers to work on their own school problems in the social studies. 3 s.h. (E)

PROFESSOR CARTWRIGHT

225. THE TEACHING OF HISTORY AND THE SOCIAL STUDIES.—Evaluation of the objectives, content, materials, and methods in the teaching of history and the social studies. 3 s.h. (E)

PROFESSOR CARTWRIGHT

226. TEACHING READING IN THE ELEMENTARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to developmental and remedial programs. 3 s.h. (E)

ASSOCIATE PROFESSOR RUDISILL

228. IMPROVEMENT OF INSTRUCTION IN THE SOCIAL STUDIES. An advanced treatment of curriculum, methods, and materials in the Social Studies. Individuals will concentrate on subjects and grade levels of their choice. 3 s.h. (E)

ASSOCIATE PROFESSOR MCLENDON

232. SUPERVISION OF INSTRUCTION.—A survey of supervision as a means of improving instruction and adapting the curriculum to the learner and to community needs. 3 s.h. (E)

PROFESSOR CARR AND ASSOCIATE PROFESSOR MCLENDON

234. SECONDARY-SCHOOL ORGANIZATION AND ADMINISTRATION.—This course is designed especially for principals, teachers, and other prospective members of the secondary-school staff. The scope of secondary education is considered to encompass junior high school, regular high school, senior high, and junior college. Special treatment is given to the problems of internal organization and management. 3 s.h. (E)

PROFESSOR BOLMEIER

236. TEACHING READING IN THE SECONDARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to developmental and remedial programs. The course provides practice with secondary-school children suffering reading retardation, including testing, diagnosis, and daily remedial teaching during a six-week period. For secondary-school teachers of all subjects who wish to improve the reading and study habits of their students. 3 s.h. (E)

ASSOCIATE PROFESSOR RUDISILL

240. EDUCATIONAL AND OCCUPATIONAL INFORMATION.—A study of the sources of occupational and educational information; methods of securing and organizing occupational information; methods of providing vocational and educational information to students through career days, college conferences, class activities, and individual counseling; methods of making job analyses and community occupational surveys. 3 s.h.

ASSISTANT PROFESSOR COLVER

241. **PRINCIPLES OF GUIDANCE.**—An historical survey of the philosophies of guidance; a study of the interrelationships between instruction, administration, and guidance in education. Prerequisite: 6 hours of psychology or educational psychology. 3 s.h.
ASSISTANT PROFESSOR COLVER

242. **MEASUREMENT OF APTITUDES, INTEREST, AND ACHIEVEMENT.**—A study of the theories and principles of psychological measurement as applied to aptitude, interest, and achievement testing. Prerequisite: 12 hours of psychology or educational psychology (6 hours of which may be taken concurrently). 3 s.h. (E)
PROFESSOR KUDER

243. **PERSONALITY DYNAMICS.**—A study of personality structure and dynamics with emphasis upon the implications for counseling and instruction. Prerequisite: 6 hours of psychology or educational psychology. 3 s.h.
ASSISTANT PROFESSOR GEHMAN

244. **COUNSELING TECHNIQUES.**—A study of individual counseling techniques including diagnosis, interviewing, program planning, and counseling evaluation. Prerequisite: Education 242 and 243 or equivalent, which may be taken concurrently. 3 s.h.
ASSISTANT PROFESSOR GEHMAN

246. **THE TEACHING OF MATHEMATICS.**—This course deals with such topics as aims, curriculum, course and lesson planning, and classroom procedure for teaching secondary-school mathematics. 3 s.h. (E) ASSISTANT PROFESSOR REYNOLDS

248. **PRACTICUM IN COUNSELING.**—Practice in individual counseling, including test administration, intake interviewing, diagnosis, counseling, program planning, report preparation, and evaluation. The student will be expected to devote about 150 hours to case work and conferences with his supervisor. Prerequisite: Education 244. 3 s.h.
ASSOCIATE PROFESSOR WEITZ

253. **SCHOOL LAW.**—The primary purpose of this course is to familiarize prospective school administrators and teachers with the legal features of school organization and administration. Although some attention is given to constitutional and statutory provisions, the main emphasis is upon court decisions relating to education. Students are expected to select appropriate problems in school law for intensive study. 3 s.h. (E)
PROFESSOR BOLMEIER

258. **EDUCATIONAL MEASUREMENTS.**—A critical study of the principles and techniques involved in measurement in education, with opportunity for individual research. Prerequisite: twelve semester hours in the Department, including a course in educational psychology. 3 s.h. (E)
ASSOCIATE PROFESSOR WEITZ

266. **SCIENCE IN THE ELEMENTARY SCHOOL.**—Presentation of basic concepts in natural and physical science through selected readings, the use of simple experiments and demonstrations, construction and use of equipment, and field studies. 3 s.h.
ASSISTANT PROFESSOR REYNOLDS

276. **THE TEACHING OF HIGH-SCHOOL SCIENCE.**—Discussion, lectures and collateral reading, related to such topics as aims, tests, curriculum, classroom and laboratory procedure, field trips, course and lesson planning for secondary-school science. 3 s.h. (E)
ASSISTANT PROFESSOR REYNOLDS

290. **ADMINISTRATION OF SCHOOL PROPERTY.**—Planning and management of the school plant and its equipment to meet instructional, health, and community needs for immediate and long-range purposes. This course is intended for teachers, principals, and superintendents. Areas to be treated will include site selection; trends in design, lighting, ventilation, and heating; custodial service and maintenance; and financing. 3 s.h. (E)
ASSOCIATE PROFESSOR STUMPF

FOR GRADUATES

204. **THE SCHOOL AS AN INSTITUTION.**—Consideration is given to the place of the school in the American social order, and its adaptation to social, economic, and political changes. Special attention is directed to the responsibility (1) of the school for seeking solutions to the perplexing problems of youth created by a chang-

ing society; and (2) of the government for providing greater equality of educational opportunities. Open to graduate students only. 3 s.h. (E)

PROFESSOR BOLMEIER AND ASSOCIATE PROFESSOR MCLENDON

210. INTRODUCTION TO EDUCATIONAL RESEARCH.—The general purpose of this course is to give the student an overview of research, acquaint him with the nature of research processes, and develop within him an understanding of the essential characteristics of good research work. The course is designed to be liberalizing as well as technical. Open to graduate students only. 3 s.h. (E)

ASSOCIATE PROFESSOR STUMPF

217. THE PSYCHOLOGICAL PRINCIPLES OF EDUCATION.—An advanced study of teaching, learning, and the learner. Selected problems guiding the reading of students will be discussed in class. Open to graduate students only. 3 s.h. (E)

ASSOCIATE PROFESSORS EASLEY AND WEITZ

235. THE NATURE, FUNCTION, AND REORGANIZATION OF THE CURRICULUM.—Selected problems guiding the reading of students. Open to graduate students only. 3 s.h. (E)

PROFESSORS CARR AND CARTWRIGHT

334-335. SEMINAR IN SCHOOL ADMINISTRATION.—Research, field observation, and reports on significant problems in educational administration. The work will be designed to integrate knowledge and skill in such areas as personnel, finance, property, law, curriculum, and public relations. 6 s.h. each semester. (E)

PROFESSORS BOLMEIER, HURLBURT;

ASSOCIATE PROFESSORS PETTY AND STUMPF

ELECTRICAL ENGINEERING

ASSOCIATE PROFESSOR VAIL, CHAIRMAN AND DIRECTOR OF GRADUATE STUDIES—131 ENGINEERING; ASSOCIATE PROFESSOR MEIER; ASSISTANT PROFESSORS ARTLEY AND OWEN

The Department of Electrical Engineering offers graduate work leading to the degree of Master of Science. Students may specialize in any of the following fields: dielectric materials; ferromagnetic materials; energy conversion; instrumentation; high voltage phenomena. The major requirement of 12 semester hours in electrical engineering is normally met by taking courses EE 201 and EE 202, plus two other courses which are so selected as to provide background for the specialized thesis research. The minor requirement of 12 semester hours outside of engineering is normally met by Mathematics 285, 286 and Physics 213-214.

A minimum prerequisite to the graduate courses in electrical engineering is a basic knowledge of differential equations, electric and magnetic field theory, and the theory of networks.

EE 201. ENERGY SYSTEMS.—Consideration of general concepts of energy storage, transfer, transformation, and control that are applicable to a wide variety of technical systems, with emphasis on their common mathematical structure. Included are electrical, magnetic, mechanical, hydraulic, aerodynamic, and thermal systems. Applications to specific engineering devices and machines. Prerequisite: permission of instructor. 3 s.h.

ASSISTANT PROFESSOR ARTLEY

EE 202. INFORMATION SYSTEMS.—Consideration of general concepts of information storage, transfer, and processing. Optimum total response of information handling systems, including considerations of stability and dynamic response in the time and frequency domains. Applications to communications networks and devices, including an introduction to computers. Prerequisite: permission of instructor. 3 s.h.

ASSISTANT PROFESSOR OWEN

EE 211. SOLID STATE ENGINEERING.—An introduction to concepts and engineering applications of solid state physics: crystalline structure and thermal properties of solids; insulators, semiconductors, and conductors; magnetic materials. Prerequisite: permission of instructor. 3 s.h.

ASSOCIATE PROFESSOR VAIL

EE 231. NUCLEAR ENGINEERING.—Review of nuclear physics; fission and the chain reaction; nuclear reactor principles; materials, instrumentation, and control of nuclear reactors; selected applications and techniques of nuclear engineering. Prerequisite: permission of instructor. 3 s.h.

ASSOCIATE PROFESSOR MEIER

EE 259. ADVANCED ELECTRICAL ENERGY CONVERSION.—Advanced theory of rotating electric machines; direct and quadrature axis components; equivalent circuits; symmetrical components; transients in machine systems. Prerequisite: An advanced course in electric machinery and permission of instructor. 3 s.h.

ASSOCIATE PROFESSOR MEIER

EE 265. ADVANCED TOPICS IN COMMUNICATIONS.—Special problems dealing in the design and application of devices and systems in communications engineering. Prerequisite: An advanced course in electronic networks. 3 s.h.

ASSISTANT PROFESSOR OWEN

EE 297-298. THESIS RESEARCH.—A student with the proper background may carry on research under direction of a member of the staff in one of the following fields. Thesis credit only. 6 s.h.

(a) DIELECTRIC AND MAGNETIC MATERIALS

ASSOCIATE PROFESSOR VAIL AND

ASSISTANT PROFESSOR ARTLEY

(b) INSTRUMENTATION.

ASSISTANT PROFESSOR OWEN

(c) ENERGY CONVERSION.

ASSOCIATE PROFESSOR MEIER

ENGLISH

PROFESSOR WARD, CHAIRMAN—325 ALLEN; PROFESSOR BOYCE, DIRECTOR OF GRADUATE STUDIES—401 ALLEN; PROFESSORS BRINKLEY, GILBERT, GOHDES, IRVING, SANDERS, STEVENSON AND TURNER, AND ASSOCIATE PROFESSOR FISHER

The department offers graduate work leading to the A.M. and Ph.D. degrees. Students intending to major in English should have taken enough undergraduate courses in literature to enable them to pursue graduate studies profitably. To satisfy the requirements for the A.M. degree a student must (a) elect 207-208 (3 or 6 semester hours); and 21 (or 18) additional semester hours; and (b) write a thesis. A statement of the requirements for the Ph.D. degree may be obtained from the Director of Graduate Studies.

In 1957-58 the courses offered are 207-208, 215, 217, 223, 224, 229, 230, 233, 234, 239, 251, 252, 311, 312, 375, 376, 379, 380, 391, 392.

FOR SENIORS AND GRADUATES

203, 204. CHAUCER.—Reading and interpretation of the text; in the first semester, the minor poems and *Troilus*; in the second, the *Canterbury Tales*. 6 s.h.

ASSOCIATE PROFESSOR FISHER

207-208. HISTORY OF THE ENGLISH LANGUAGE.—A survey of the language from Old to Present English, taking into consideration developments in phonology, morphology, syntax, and vocabulary. 6 s.h.

ASSOCIATE PROFESSOR FISHER

215, 216. ELIZABETHAN DRAMA.—Careful study of one or two major dramatists (Jonson or Beaumont and Fletcher) and extensive reading in the other writers (Heywood, Ford, Massinger, Marlowe, Middleton) with emphasis on the nature and qualities of their work in relation to its historical background. 6 s.h.

PROFESSOR GILBERT

217. MILTON.—Milton's poetry and prose, with emphasis on the major poems. 3 s.h.

PROFESSORS BRINKLEY AND GILBERT

218. SPENSER.—The reading of Spenser's work, with chief attention to *The Faerie Queene*. 3 s.h.

PROFESSOR GILBERT

219, 220. THE EIGHTEENTH CENTURY.—Swift, Pope, Defoe, Addison, Steele, and others are studied in the first semester; in the second, Gray, Johnson, Boswell, Collins, Goldsmith, the novelists, and other writers. PROFESSORS BOYCE AND IRVING

221, 222. ENGLISH LITERATURE OF THE EARLY NINETEENTH CENTURY.—The British Romantic poets and prose writers from Scott to the early Carlyle, with special attention to Wordsworth, Coleridge, and Keats. 6 s.h.

PROFESSORS SANDERS AND STEVENSON

223, 224. ENGLISH LITERATURE OF THE LATER NINETEENTH CENTURY.—The first semester is devoted chiefly to Carlyle, Dickens, Thackeray, Tennyson, and Browning; the second semester to Arnold, Ruskin, Pater, George Eliot, Meredith, the Pre-Raphaelites, and Swinburne. 6 s.h. PROFESSOR STEVENSON

227. LITERARY CRITICISM.—A study of the Greek and Roman critics, in chronological order but with emphasis on their permanent value rather than on the mere history; also of the Continental and English critics to about 1700. 3 s.h. PROFESSOR GILBERT

229, 230.—AMERICAN LITERATURE, 1800-1870.—The writers emphasized in the first semester are Emerson, Thoreau, and Hawthorne; in the second semester, Poe and Melville. 6 s.h. PROFESSOR TURNER

231. EMERSON.—A study of Emerson's ideas as reflected in selected examples of his essays and poems. 3 s.h. PROFESSOR GOHDES

232. WHITMAN.—A detailed study of *Leaves of Grass* and of selected prose works. 3 s.h. PROFESSOR GOHDES

233. AMERICAN LITERATURE 1870-1900.—Selected works of the chief authors of the period, including Whitman, Lanier, Mark Twain, James, Howells, Crane, and Emily Dickinson. The lectures will deal with the social background as well as the literary trends and the careers of the major authors. 3 s.h. PROFESSOR GOHDES

234. AMERICAN LITERATURE OF THE TWENTIETH CENTURY.—Selected works of representative authors, including Dreiser, Edith Wharton, Mencken, Lewis, Willa Cather, O'Neill, Robinson, Frost, Eliot, Hemingway, and Faulkner. The lectures will deal primarily with literary trends as shaped by the social background. 3 s.h. PROFESSOR GOHDES

237. ENGLISH DRAMA, 1642-1800.—The heroic play and the comedy of manners of the Restoration; the important plays, serious and comic, of the eighteenth century. 3 s.h. PROFESSOR WARD

239. SHAKESPEARE.—A study of the plays and poems, with attention to sources, earlier criticism, and the work of Shakespeare's contemporaries. 3 s.h. PROFESSOR GILBERT

251, 252. ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY.—A survey of the major works in prose, poetry, and drama from 1600 to the death of Dryden. 6 s.h. PROFESSOR WARD

262. ENGLISH LITERATURE OF THE EARLY TWENTIETH CENTURY.—Representative work of leading writers from 1900 to 1930, in the fields of fiction, drama, poetry, and essay. Critical analysis of selected specimens, and discussion of types, themes, and trends. 3 s.h. PROFESSOR STEVENSON

269, 270. SOUTHERN LITERATURE.—The principal authors and the chief literary development from the beginning to the present. Emphasis in the first semester is on Byrd, Kennedy, Simms, Poe, Timrod, and the humorists; in the second on Lanier, Harris, Cable, Mark Twain, Ellen Glasgow, and Faulkner. Attention is given to the historical and cultural background and to literary relations extending outside the region. 6 s.h. PROFESSOR TURNER

273. HAWTHORNE AND MELVILLE.—Extensive reading in the works of Hawthorne and Melville, and close study of selected writings. 3 s.h. PROFESSOR TURNER

274. AMERICAN HUMOR.—The development of the native tradition in the Down-East humorists and the humorists of the Old Southwest. Extensive reading in Mark Twain and his contemporaries, and some attention to the continuation of the tradition after Mark Twain. 3 s.h. PROFESSOR TURNER

FOR GRADUATES

304. STUDIES IN THE METAPHYSICAL POETS.—A careful study of Donne, Herbert, and Vaughan against the seventeenth century background, with some attention to their influence on other writers in the period and their impact on twentieth century poetry. 3 s.h. PROFESSOR BRINKLEY

311. BEOWULF.—Reading and interpretation of the text. 3 s.h.

ASSOCIATE PROFESSOR FISHER

312. EARLIER MIDDLE ENGLISH LITERATURE.—Linguistic and literary analysis of selected texts from 1200 to 1350, with attention to the Middle English dialects. 3 s.h.

ASSOCIATE PROFESSOR FISHER

- 315, 316. LATER MIDDLE ENGLISH LITERATURE.—Reading and interpretation of the texts of the literature from 1350 to 1500, exclusive of Chaucer. Emphasis in the first term on Wyclif, Gower, the *Pearl* Poet, *Piers Plowman*; in the second, on Lydgate, the Scottish Chaucerians, Malory, the Middle English drama, carols. 6 s.h. To be offered in 1958-59.

ASSOCIATE PROFESSOR FISHER

345. THE EIGHTEENTH-CENTURY NOVEL.—Richardson, Fielding, Smollett, and Sterne are emphasized. Attention is given to earlier prose fiction and to other contributing literary patterns. 3 s.h.

PROFESSOR BOYCE

- 375, 376. SEMINAR IN THE SIXTEENTH AND SEVENTEENTH CENTURIES. 6 s.h.

PROFESSORS GILBERT AND WARD

377. SEMINAR IN THE EIGHTEENTH CENTURY. 3 s.h.

PROFESSOR BOYCE

378. SEMINAR: SAMUEL JOHNSON'S LITERARY CRITICISM AND RELATED TOPICS. 3 s.h.

PROFESSOR BOYCE

- 379, 380. SEMINAR IN THE EARLY NINETEENTH CENTURY. 6 s.h.

PROFESSOR STEVENSON

- 381, 382. SEMINAR IN THE LATER NINETEENTH CENTURY. 6 s.h.

PROFESSOR STEVENSON

- 391, 392. SEMINAR IN AMERICAN LITERATURE. 6 s.h.

PROFESSORS GOHDES AND TURNER

FORESTRY

PROFESSOR KORSTIAN, CHAIRMAN AND DIRECTOR OF GRADUATE STUDIES—308 SOCIAL SCIENCE; PROFESSORS HARRAR, KRAMER, AND SCHUMACHER; ASSOCIATE PROFESSOR ANDERSON; ASSISTANT PROFESSORS JOHNSON AND RALSTON

Major and minor work is offered in the scientific aspects of forestry leading to the Master of Arts and Doctor of Philosophy degrees. Work for these degrees may be pursued only in forest-tree physiology, wood anatomy and properties, forest pathology, silvics, forest soils, forest mensuration, forest entomology, and forest economics. College graduates who have had specialized training in botany or soil science and in allied basic subjects, such as physics, chemistry, geology, and zoology, may pursue graduate study and research only in the specialized fields for which their previous work has qualified them. Students who do not have previous training in forestry will be required to complete a minimum of thirty semester hours of approved work in forestry as a preliminary requirement to advanced study for the A.M. and Ph.D. degrees. The holders of these degrees will not be regarded as professionally trained foresters. For information on professional training in forestry, see *Bulletin of the School of Forestry*. For detailed information concerning admission to the Graduate School and for regulations governing candidacy for the A.M. and Ph.D. degrees and for other regulations, consult the proper pages in this *Bulletin*.

FOR SENIORS AND GRADUATES

224. FOREST PATHOLOGY.—Infectious and non-infectious diseases of forest trees, and related deterioration of forest products. Field and laboratory study of symptoms, etiology, and control. Prerequisites: Botany 1 and 2, or equivalent. 3 s.h.

ASSISTANT PROFESSOR JOHNSON

231. FOREST ENTOMOLOGY.—Morphology, general classification, life histories, and control of insects injurious to forest trees, logs, and lumber. 3 s.h.

ASSOCIATE PROFESSOR ANDERSON

251. **SAMPLING METHODS IN FORESTRY.**—Statistical background for solution of sampling problems with special reference to sample inventory of a forest property. Offered both semesters. Prerequisite: Forestry S151. 3 s.h.

PROFESSOR SCHUMACHER

252. **FOREST MENSURATION.**—Empirical equation and curve fitting appropriate for construction of timber yield tables, tree volume and taper tables; significance tests and graphical solution of equations. Assignments require operation of calculating machines. Prerequisite: Forestry 251. 3 s.h. PROFESSOR SCHUMACHER

253. **DENDROLOGY.**—Nomenclature, classification, and identification of woody plants with special reference to species indigenous to southeastern United States and other important forest regions of temperate North America. Laboratory and field work. Prerequisite: one year of biology. 3 s.h. PROFESSOR HARRAR

257. **DESIGN OF FORESTRY EXPERIMENTS AND ANALYSIS OF DATA.**—Role of experimental design in field and laboratory, and statistical analysis of data as aspects of scientific method in forest research. 5 s.h. PROFESSOR SCHUMACHER

259. **PROPERTIES OF WOOD.**—The chemical nature of wood substance and its industrial chemical derivatives. Wood-moisture relationships; pertinent non-mechanical physical properties; mechanical properties and factors affecting the strength of wood; standard timber testing procedures. Uses of woods as determined by their properties. Prerequisites: one year of college chemistry; one course in college physics. 3 s.h. PROFESSOR HARRAR

260. **WOOD ANATOMY.**—Study of the physical features and the gross and minute structural characteristics of wood leading to the identification of the commercial woods of the United States, and the important tropical woods used in American wood-working industries. Elementary microtechnique. Prerequisite: one year of biology. 3 s.h. PROFESSOR HARRAR

261. **FOREST SOILS.**—Origin, development, and classification of soils with special emphasis on those developed in humid climates; morphological, physical, and chemical properties of soils in relation to growth of trees; effect of forests on soils. Prerequisites: Chemistry 1 and 2, and Physics 1, or equivalents; physical geology, mineralogy, petrology, and analytical chemistry are also desirable. 3 s.h.

ASSISTANT PROFESSOR RALSTON

264. **SILVICS.**—Ecological foundations of silviculture with special reference to forest site factors; influence of forests on their environment; growth and development of trees and stands; origin, development, and classification of forest communities; methods of studying forest environments. Desirable prerequisites: plant physiology, plant ecology, and Forestry 261, or equivalent. 3 s.h. ASSISTANT PROFESSOR RALSTON

276. **FORESTRY POLICY.**—Objective study and analysis of the development of public land and forestry policies in the United States, present policies of public and private forestry organizations, and current policy issues in the light of economic and other criteria. 2 s.h.

277. **ECONOMICS OF FORESTRY.**—Principles of economics used in the analysis of factors affecting the supply of forest products, pricing of stumpage and primary forest products, factors affecting the demand for forest products, economic characteristics and problems of the major forest products industries, analysis of such specific private forestry problems as marketing, forest ownership pattern, taxation, credit, risk, and economic fluctuations. Prerequisite: at least one course in the principles of economics. 3 s.h.

FOR GRADUATES

326. **ADVANCED FOREST SOILS.**—Interrelations of the physical, chemical, and biological characteristics of forest and range soils. Prerequisites: analytical chemistry and Forestry 261. 3 s.h. ASSISTANT PROFESSOR RALSTON

356. **SEMINAR IN FOREST ECONOMICS.**—Examination and discussion of the application of economic concepts in forestry, the potential contribution of economic analysis to private and public forest management; current research in forest economics. Prerequisite: Forestry 277 or equivalent; courses in economic theory are desirable. 2 s.h.

357, 358. RESEARCH IN FORESTRY.—Credits to be arranged. Students who have had adequate training may do research under direction of members of the Faculty in the following branches of forestry:

a. SILVICS.—Prerequisites: Forestry 254, 261, and 264, or equivalents.

PROFESSOR KORSTIAN

b. FOREST SOILS.—Prerequisite: Forestry 261 or equivalent.

ASSISTANT PROFESSOR RALSTON

e. FOREST ECONOMICS.—Prerequisite: Forestry 277 or equivalent.

f. PROPERTIES OF WOOD.—Prerequisites: Forestry 259 and 260, or equivalents.

PROFESSOR HARRAR

g. FOREST MENSURATION.—Prerequisites: Forestry S151, 251, and 252, or equivalents.

PROFESSOR SCHUMACHER

h. FOREST ENTOMOLOGY.—Prerequisite: Forestry 231 or equivalent.

ASSOCIATE PROFESSOR ANDERSON

k. PHYSIOLOGY OF FOREST TREES.—Prerequisites: Plant physiology and plant ecology or silvics.

PROFESSOR KRAMER

l. FOREST PATHOLOGY.—Prerequisites: Plant physiology and Forestry 224 or equivalent.

ASSISTANT PROFESSOR JOHNSON

GERMANIC LANGUAGES AND LITERATURE

PROFESSOR SALINGER, CHAIRMAN AND DIRECTOR OF GRADUATE STUDIES—301C GRAY;

PROFESSORS SHEARS AND TARABA

The Department of German offers graduate work leading to the A.M. degree. Students who expect to major in German should have had sufficient undergraduate courses in Germanic languages to enable them to proceed to more advanced work.

Students who wish to take courses in German for a minor should normally have completed a third-year course (in exceptional cases, a second-year) of College German with acceptable grades.

For 1957-58 the courses planned are 205, 206, 213, 214.

201, 202. GOETHE.—A study of his life and works, in the light of his lasting significance to World Literature. 6 s.h.

PROFESSOR SALINGER

203, 204. EIGHTEENTH CENTURY.—Eighteenth-century German literature in its relation to contemporary European philosophy. 6 s.h.

PROFESSOR SALINGER

205, 206. MIDDLE HIGH GERMAN.—The language and literature of Germany's first classical period. 6 s.h.

PROFESSOR TARABA

207, 208. GERMAN ROMANTICISM.—The course covers the entire field of German Romanticism from 1800 to 1850. 6 s.h.

PROFESSOR SALINGER

209, 210. KLEIST, GRILLPARZER, AND HEBBEL.—The development of the drama in Germany and Austria between Schiller and naturalism. 6 s.h.

PROFESSOR SALINGER

211, 212. HEINRICH HEINE.—A study of the German poet and his immediate successors in the movement known as *Jungdeutschland*. 6 s.h.

PROFESSOR SALINGER

213, 214. LITERATURE OF THE EMPIRE, 1871-1914.—A study of the literature of this period with special emphasis on a few leading writers such as Fontane, Hauptmann, Mann, Hesse, Rilke, Werfel and the Expressionists.

PROFESSORS SHEARS AND SALINGER

RELATED COURSES IN OTHER DEPARTMENTS

The following courses in other departments are recommended to students, who are majoring in Germanics, as particularly valuable in building a proper background for Germanic studies:

(a) Graduate courses in literature or philology, offered by the ancient and modern language departments, to be selected after consultation with the Germanic Department.

(b) Graduate courses in history and philosophy, offered by those departments, to be selected after consultation with the Germanic Department.

HISTORY

PROFESSOR CARROLL, CHAIRMAN—235 ALLEN; PROFESSOR WOODY, DIRECTOR OF GRADUATE STUDIES—231 ALLEN; PROFESSORS ALDEN, CLYDE, CURTISS, HAMILTON, LANNING, AND MANCHESTER; ASSOCIATE PROFESSORS FERGUSON, NELSON, PARKER, ROPP, AND WATSON; ASSISTANT PROFESSOR STEVENS

A student who intends to work for an A.M. degree in history must present a total of eighteen semester hours of credit for undergraduate courses in history, of which six hours must be in American History if he plans to take his major in that field.

A candidate for the degree of Doctor of Philosophy in history is required to prepare himself in four fields of history, one of which must be in American history and another in the history of Western Europe. The choice and delimitation of fields is determined in consultation with his supervisor and the Director of Graduate Studies. The Department offers graduate instruction in the following fields: Western Europe; American history; Great Britain; Latin America; American Foreign Relations; the Far East in the modern period; Russia; Military history.

Students may receive credit for either semester of a hyphenated course without taking the other semester if they obtain written permission from the instructor and the Director of Graduate Studies.

For 1957-58 the courses planned are as follows: 205-206, 213-214, 217-218, 221-222, 227, 228, 233-234, 235, 236, 243-244, 261-262, 263-264, 265, 266, 267, 268, 269, 270, 305, 309, 312, 315, 317, 320, 321, 343, 401.

FOR SENIORS AND GRADUATES

203-204. THE UNITED STATES, 1850-1900.—The rise of sectionalism, secession, wartime problems of the Union and Confederacy, political and economic adjustments of Reconstruction, the status of the Negro, the New South, problems of capital and labor, the agrarian revolt, political parties and reform. 6 s.h. PROFESSOR WOODY

205-206. THE UNITED STATES IN THE TWENTIETH CENTURY.—The emergence of the United States as a major power; attention is focused on domestic developments and conflicting theories of expansion and federal power. Emphasis in the first semester is on the progressive era and the first World War; the second semester is devoted to the twenties and to the Franklin Roosevelt administration. 6 s.h. ASSOCIATE PROFESSOR WATSON

209-210. CONSTITUTIONAL HISTORY OF THE UNITED STATES, 1760 TO THE PRESENT.—A study of the basic problems in forming the Constitution; of its development through the major crises in the history of the United States; of the effects of changing social, cultural, economic, and political conditions on the Constitution. 6 s.h. ASSISTANT PROFESSOR STEVENS

213-214. THE OLD SOUTH.—Political thought and party trends from Jefferson to Calhoun; agriculture, slavery, expansion; commerce, manufacturing, transportation; urban life, religion, education; the rise of Southern nationalism. 6 s.h. PROFESSOR WOODY

215-216. FOREIGN POLICY AND DIPLOMACY OF THE UNITED STATES.—The work in the first semester, covering the period 1775-1877, deals with such topics as the origins and evolution of basic foreign policies; isolation from Europe; paramount interests in Latin America, including the Monroe Doctrine; international co-operation in the Far East. The work in the second semester, covering the period since 1877, deals with such topics as the rise of the new Manifest Destiny; beginnings of American imperialism in Latin America and the Far East; the failure of

traditional neutrality in the first World War; postwar conflicts between isolation and collective security; involvement in the second World War. 6 s.h.

PROFESSOR CLYDE

217, 218. EUROPE SINCE 1870.—International relations since the Franco-German War is the chief subject of study in this course; special emphasis is placed upon the underlying economic and political influences. 6 s.h.

PROFESSOR CARROLL

221-222. THE AGE OF THE RENAISSANCE.—The decline of characteristic features of medieval civilization and the rise of modern European institutions with particular attention to intellectual movements from Dante to Erasmus. 6 s.h.

ASSOCIATE PROFESSOR NELSON

225-226. THE AGE OF THE REFORMATION.—A survey of European civilization from 1500 through the Peace of Westphalia. 6 s.h.

ASSOCIATE PROFESSOR NELSON

227, 228. EUROPE IN THE NINETEENTH CENTURY.—A study, beginning with the career of Napoleon Bonaparte, of the forces and personalities influential in the nineteenth century. Emphasis in the first semester is on the problems of the biographer; in the second, on those of a student of national communities. 6 s.h.

ASSOCIATE PROFESSOR PARKER

231-232. THE HISPANIC COLONIES AND REPUBLICS IN AMERICA.—The development of the Iberian states as colonizing powers, the conquest of America, the Spanish treatment of the Indian, the contest between Spain and other European nations over America, the independence movement, the struggle for stable government, the rise of liberalism with special emphasis upon Mexico from the Revolution of 1910 to the present, and basic inter-American developments. 6 s.h.

PROFESSOR LANNING

233-234. THE INSTITUTIONAL, CULTURAL, AND SOCIAL HISTORY OF HISPANIC AMERICA.—The first semester of this course deals with subject races, the development of mixed breeds, the governmental system, the Church and the Inquisition, and Spanish culture with emphasis upon university subjects. In the second semester the work deals with the political ideas of the wars of independence, revolution and dictatorship, the rise of public education, public health, land reform, and proletarian movements. 6 s.h.

PROFESSOR LANNING

235, 236. EUROPEAN EXPANSION OVERSEAS.—In the first semester attention is given to the age of discovery and to the origin and development of the great European overseas empires with special emphasis on the role of the Portuguese in India and the Americas. The work of the second semester deals with the decline of the mercantile empires, the emergence of independent centers of European culture overseas (Brazil being taken as one example), and the revival of mercantile imperialism in the late nineteenth and the twentieth centuries. 6 s.h.

PROFESSOR MANCHESTER

241-242. THE FAR EAST.—The history of the Western impact on Eastern Asia in the 19th and 20th centuries. Emphasis is placed on such matters as commercial and colonial expansion, the opening of China and Japan, the development by the Western Powers and Japan of colonial, imperialistic, and nationalistic interests, and the rise of Communist power in Asia. 6 s.h.

PROFESSOR CLYDE

243-244. THE UNITED STATES AND THE FAR EAST.—An historical analysis of American relations with the peoples of Eastern Asia during the 19th and 20th centuries. 6 s.h.

PROFESSOR CLYDE

245-246. WAR IN THE MODERN WORLD.—This course is concerned with the relations between warfare and modern political, economic and social conditions. Special attention is given to the development of British and American military methods and to the events of the American Civil War and the two World Wars. The work in the first semester deals with Clausewitz's theories of warfare and the period from the introduction of gunpowder to 1871; in the second semester there is a more detailed analysis of recent land, sea, and air warfare. 6 s.h.

ASSOCIATE PROFESSOR ROPP

261-262. **RUSSIA IN THE TWENTIETH CENTURY.**—A study of the background of the Revolution of 1917 followed by an analysis of the history and policies of the Soviet state. 6 s.h.
 PROFESSOR CURTISS

263-264. **AMERICAN COLONIAL HISTORY AND THE REVOLUTION, 1607-1789.**—The founding and institutional development of the English colonies; the background, progress, and results of the Revolution. 6 s.h.
 PROFESSOR ALDEN

265, 266. **THE WESTWARD MOVEMENT IN THE UNITED STATES.**—Settlement from the Atlantic to the Pacific and beyond; frontier problems of colonization, land systems, economy, law and government; interactions of frontier and metropolis, the first semester emphasizes the West in the colonial period, Revolution, and formation of the union; the second semester stresses sectionalism, slavery, expansion and the Civil War, the modern West, and contemporary problems. 6 s.h.
 ASSISTANT PROFESSOR STEVENS

267, 268. **ENGLAND FROM EDWARD III TO ANNE.**—The transition from medieval to modern England, the English Renaissance, and the political, social, and intellectual problems of the seventeenth century. 6 s.h.
 ASSOCIATE PROFESSOR FERGUSON

269. **BRITISH HISTORY FROM 1714 to 1867.**—The interrelationship of the leadership of such men as Walpole, Chatham, Pitt, and Peel with war, revolution, and social institutions; the rise of the cabinet system; the Industrial Revolution; imperial changes; and reform. 3 s.h.
 PROFESSOR HAMILTON

270. **GREAT BRITAIN AND THE COMMONWEALTH OF NATIONS, 1867 TO THE PRESENT.**—A history of Great Britain at the height of her world dominance and beyond, her oceanic empire, and the evolution of that empire into a unique world-wide Commonwealth of Nations. 3 s.h.
 PROFESSOR HAMILTON

FOR GRADUATES

305. **SEMINAR IN THE HISTORY OF ENGLAND AND THE BRITISH EMPIRE.**—The work consists of practical training in the methods of historical research based on sources for modern British history. Year course. 2 s.h.
 PROFESSOR HAMILTON

309. **SEMINAR IN AMERICAN COLONIAL AND REVOLUTIONARY HISTORY.**—Year Course. 2 s.h.
 PROFESSOR ALDEN

315. **SEMINAR IN SOUTHERN HISTORY.**—Year course. 2 s.h.
 PROFESSOR WOODY

317. **SEMINAR IN RECENT EUROPEAN HISTORY.**—Year course. 2 s.h.
 PROFESSOR CARROLL

321. **SEMINAR IN THE HISTORY OF SPAIN, HISPANIC AMERICA, AND INTER-AMERICAN RELATIONS.**—Year course. 2 s.h.
 PROFESSOR LANNING

343. **SEMINAR IN THE HISTORY OF AMERICAN FOREIGN RELATIONS AND THE FAR EAST.**—Particular attention is given to a critical examination of the bibliography of the field. Year course. 2 s.h.
 PROFESSOR CLYDE

401. **SEMINAR ON THE BRITISH COMMONWEALTH.**—3 s.h.
 PROFESSORS COLE, HAMILTON AND SPENGLER

HISTORIOGRAPHY AND THE TEACHING OF HISTORY

FOR GRADUATES

312. **SEMINAR IN THE TEACHING OF HISTORY IN COLLEGE.**—The work in this course is intended to acquaint students with the problems involved in teaching history in college. It includes critical observation of the teaching by members of the History Staff in Duke University. Year course. 2 s.h.
 PROFESSORS MANCHESTER AND HAMILTON

This course is required of all candidates for the degree of Doctor of Philosophy who are in residence as many as two years at Duke University unless excused therefrom by the Department.

320. HISTORIOGRAPHY.—A critical study of the process of finding, appraising, and interpreting the sources of history and of the presentation of the results in narrative. Works of important historians from Herodotus to the present are analyzed. The student undertakes specific exercises in research, criticism, and narration. There is consideration of such general topics as schools, theories, philosophies, and the function of history. Year course. 4 s.h. ASSOCIATE PROFESSOR NELSON

This course is required of all candidates for the degree of Doctor of Philosophy who are in residence as many as two years at Duke University unless excused therefrom by the Department.

MATHEMATICS

PROFESSOR GERGEN, CHAIRMAN—134 PHYSICS BUILDING; PROFESSOR ROBERTS, DIRECTOR OF GRADUATE STUDIES—230 PHYSICS BUILDING; PROFESSORS CARLITZ, DRESSEL, ELLIOTT, AND THOMAS; VISITING ASSOCIATE PROFESSOR CAMPBELL; ASSISTANT PROFESSORS GALLIE AND SHOENFIELD; DR. WARNER

Graduate work in the Department of Mathematics is offered leading to the A.M. and Ph.D. degrees. The student, in his undergraduate work, must have had courses in differential and integral calculus, and at least 6 semester hours of other courses in mathematics on the junior or senior level.

The A.M. degree with a major in mathematics is awarded primarily on the basis of scholarship. Of the 24 semester hours of course work required for this degree, 18 semester hours must be taken in the Department of Mathematics.

The Ph.D. degree in mathematics is awarded upon the demonstration of ability and training in research. The original dissertation, therefore, becomes the most important of the formal requirements for this degree.

Because of the important literature of mathematics written in German and French, the student must have a practical reading knowledge of these languages near the beginning of his graduate study.

For 1957-58 the courses planned are 221, 235-236, 271-272, 285, 286, 291-292, 333-334, 375-376, 395-396.

FOR SENIORS AND GRADUATES

221. NUMERICAL ANALYSIS.—The electronic computer, the art of calculation, and the analysis of error. The transition from physical reality to physical abstraction, to mathematical abstraction, to numerical abstraction, to a numerical computing program. Numerical function theory, theory of approximation, approximate solution of equations, and numerical calculus. Prerequisite: calculus. 3 s.h. ASSISTANT PROFESSOR GALLIE

227-228. THEORY OF NUMBERS.—Congruences, arithmetic functions, compound moduli, quadratic reciprocity, Gauss sums, quadratic forms, sums of squares. Prerequisite: calculus. 6 s.h. PROFESSOR CARLITZ

229-230. ALGEBRAIC NUMBERS.—Ideals, unique factorization, divisors of the discriminant, determination of the class number. Prerequisite: theory of equations. 6 s.h. PROFESSOR CARLITZ

235-236. ABSTRACT ALGEBRA.—Groups, fields, rings, matrices, quadratic and bilinear forms, general Galois theory, hypercomplex systems. Prerequisite: calculus. 6 s.h. PROFESSOR CARLITZ

247-248. ARITHMETIC OF POLYNOMIALS.—Field theory, detailed study of finite fields, special polynomials and functions, valuation theory, the zeta function. Prerequisite: Mathematics 235 or consent of the instructor. 6 s.h. PROFESSOR CARLITZ

253-254. DIFFERENTIAL GEOMETRY.—Curves and surfaces in three-dimensional Euclidean space, applicability, differential parameters, Riemannian geometry of n -space. Prerequisite: calculus. 6 s.h.
 PROFESSOR THOMAS

255-256. PROJECTIVE GEOMETRY.—Postulational, synthetic treatment centering around Desargues' theorem and the principle of projectivity. Conics, coordinates, order, continuity, metric properties. Prerequisite: calculus. 6 s.h.
 PROFESSOR THOMAS

261-262. MATHEMATICAL ANALYSIS FOR SOCIAL SCIENTISTS.—A development of basic concepts in mathematics, designed for advanced students in psychology, economics and other social sciences, having as the objective for the student the understanding of the mathematical method and the acquisition of technical efficiency. Particular topics considered include mathematical systems, set theory, matrices, vectors, elements of the calculus, difference equations. Prerequisite: one year of college mathematics. 6 s.h.
 PROFESSOR GERGEN

271-272. INTRODUCTORY TOPOLOGY.—Topological properties of Euclidean spaces, set-theoretic and combinatorial methods. Prerequisite: calculus. 6 s.h.
 ASSOCIATE PROFESSOR SHOENFIELD

285. MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.—Vectors, line and surface integrals, tensors, complex variables, differential and integral equations. Prerequisite: Mathematics 53. 3 s.h.
 PROFESSOR DRESSEL

286. MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.—Wave equation, Fourier series, heat equations, telegraphic equation, Legendre polynomials, Bessel functions, Schrödinger's equation. Prerequisite: Mathematics 53. 3 s.h.
 PROFESSOR DRESSEL

291-292. THEORY OF FUNCTIONS.—Limits, implicit functions, power series, double series, Cauchy's theorem and its applications, residues, Riemann surfaces, conformal mapping. Prerequisite: calculus. 6 s.h.
 PROFESSOR GERGEN

FOR GRADUATES

325-326. REAL VARIABLE.—Number system, Lebesgue and Stieltjes integrals, topics in Fourier series. Prerequisite: Mathematics 291-292. 6 s.h.
 PROFESSOR GERGEN

333-334. ANALYTIC THEORY OF NUMBERS.—Distribution of primes, primes in an arithmetic progression, Waring and Goldbach problems, applications of elliptic functions. Prerequisite: Mathematics 291-292. 6 s.h.
 PROFESSOR CARLITZ

337-338. EXISTENCE THEOREMS.—Systems of partial differential equations, Pfaffian systems, theorems of Cauchy, Riquier, and Cartan, singular integral varieties. Prerequisite: Mathematics 291-292. 6 s.h.
 PROFESSOR THOMAS

343-344. ORDINARY DIFFERENTIAL EQUATIONS.—Solution by separation of variables, exact differentials, integrating factors, solution in series. Cauchy's existence theorem, linear differential systems, singular points, partial differential equations equivalent to ordinary systems. Prerequisite: Mathematics 291-292. 6 s.h.
 PROFESSOR THOMAS

371-372. DIMENSION THEORY.—Abstract spaces, separation theory for Euclidean spaces, dimension theory. Prerequisite: Mathematics 271-272. 6 s.h.
 PROFESSOR ROBERTS

375-376. SEMINAR IN TOPOLOGY.—Open to students who have completed Mathematics 272 or its equivalent. 6 s.h.
 PROFESSOR ROBERTS

395-396. TOPOLOGICAL ALGEBRA.—Banach, Hilbert, and locally convex spaces; theorems of Banach, Hahn-Banach, Banach-Steinhaus, Krein-Milman, Mackey; introduction to L. Schwartz's theory of distributions. Banach algebras: the Gelfand theory, Silov's ideal theory, introduction to harmonic analysis on groups with applications to Fourier analysis; operator algebras. Prerequisite: Mathematics 236 and 292, or consent of the instructor. 6 s.h.
 DR. WARNER

MECHANICAL ENGINEERING

PROFESSOR MACDUFF, CHAIRMAN; PROFESSORS KENYON AND REED;
AND ASSISTANT PROFESSOR ELSEVIER

The Mechanical Engineering Department offers graduate work leading to the degree of Master of Science. It is intended that the work for this degree provide a broad basic foundation in the art of applying science to Mechanical Engineering design and analysis. The major requirement of 12 semester hours in Mechanical Engineering is normally met by taking courses ME 201 and ME 202, plus two other courses which are so selected as to provide background for the specialized thesis-research. The minor requirements of 12 semester hours outside the College of Engineering is normally met by Mathematics 285, 286, and Physics 213, 214.

A minimum prerequisite to the graduate courses in mechanical engineering is a basic knowledge of differential equations, undergraduate thermodynamic theory, kinematics, mechanics, and machine design.

ME 201. THEORETICAL AND APPLIED MECHANICS.—Introduction to the theory of elasticity, vibrations analysis, and hydrodynamics. This course is the same as CE 201. 3 s.h.
PROFESSORS MACDUFF AND ROWE

ME 202. THEORETICAL THERMODYNAMICS.—Classical and current concepts of the conversion of heat and work. Partial differential equations and the combined First and Second Law. Thermo-electricity; super-critical pressure systems; reheat and regenerative processes; binary-vapor systems; introduction to unsteady systems. 3 s.h.
PROFESSOR KENYON AND ASSISTANT PROFESSOR ELSEVIER

ME 221. ANALYSIS OF HEAT AND FLUID FLOW.—Flow of compressible and incompressible fluids; transfer of heat by conduction, convection, and radiation; mathematical methods; partial differential equations; Mach Number concept for sonic and subsonic flow; boundary layer phenomena for viscous fluids. 3 s.h.
PROFESSOR KENYON

ME 231-232. SYSTEMS ENGINEERING.—Methods of obtaining parameters for strength, response, and stability studies of mechanical systems. Impedance and operational means of analysis; mechanical and electronic analogs; nonlinear theories. 6 s.h.
PROFESSOR MACDUFF

ME 250. REFRIGERATION CYCLE ANALYSIS.—Refrigeration cycle elements; theory of reciprocating, axial, and rotary compressors; condensers; evaporators; heat exchangers; cooling towers; characteristics of refrigerants; single and multi-stage cycle analysis; absorption systems; heat pump theory. 3 s.h.
PROFESSOR REED

ME 280. NUCLEAR REACTOR POWER CYCLES.—Introduction to basic reactor principles and reactor types. Consideration of thermodynamic cycles for nuclear reactors for stationary and mobile plants. Analysis of fluid flow and heat transfer problems unique to reactors with development of methods of reactor safety techniques. Metallurgical problems peculiar to reactor design. 3 s.h.
PROFESSOR KENYON

ME 297-298. THESIS RESEACH.—A student with proper background may carry on research under the direction of staff members in one of the following fields. Thesis credit only. 6 s.h.

(a) Systems Engineering; PROFESSOR MACDUFF

(b) Thermodynamics, Heat Transfer and Fluid Flow;

PROFESSORS KENYON AND REED; ASSISTANT PROFESSOR ELSEVIER

PHILOSOPHY

PROFESSOR BAYLIS, CHAIRMAN—212-D WEST DUKE BUILDING; ASSISTANT PROFESSOR BERNARD PEACH, DIRECTOR OF GRADUATE STUDIES—212-B WEST DUKE BUILDING; PROFESSORS NEGLEY AND PATTERSON; ASSISTANT PROFESSORS BUCK, CLARK AND WELSH;
VISITING ASSISTANT PROFESSOR CASTANEDA

The Department of Philosophy offers graduate work leading to the A.M. and Ph.D. degrees. Students may specialize in any of the following fields; The History

of Philosophy; Logic; Philosophy of Science; Epistemology; Metaphysics; Philosophical Analysis; Ethics; Aesthetics; Political Philosophy; Philosophy of Religion; and Philosophy of Law.

Individual programs of study are developed to meet each student's needs. The following requirements, however, are fundamental: (1) in February of their first year new graduate students in philosophy who are not then taking the Preliminary Examinations for the Ph.D. are required to take Qualifying Examinations in the history of philosophy, ancient and modern, and in logic, both classical and symbolic. A student's achievement on these examinations will be regarded as indicative of his ability to undertake advanced graduate work. (2) Preliminary Examinations for the Ph.D., which may be taken only after a student has met the language requirements for that degree, should be passed during the first year of study beyond the A.M. degree. In these examinations students are expected to combine historical knowledge with critical understanding.

The Preliminary Examinations will ordinarily be given during the spring, usually in late February. They consist of:

- 1) Four three-hour written examinations in Philosophy as follows:
 - a) The History of Philosophy, ancient, medieval, modern, and contemporary
 - b) and c) Two of the following:
 - i) Epistemology and Metaphysics
 - ii) Axiology
 - iii) Logic and/or Scientific Method
 - d) The philosophical views of one outstanding philosopher, to be selected by the student with the approval of the Director of Graduate Studies. (He should not be the same philosopher as the one whose works are central to the student's Ph.D. thesis.)
- 2) An examination in the minor field, as set by the committee member from that field.
- 3) At the discretion of the Department, a supplementary oral examination in selected areas.

Upon passing these examinations, and not until then, a student is accepted as a candidate for the Ph.D. degree.

Work in a minor field outside of the Department, but not necessarily confined to any one department, must include six hours for the A.M. and nine for the Ph.D. and may include more as a student's program requires or permits.

For 1957-58 the courses planned are as follows: 202, 203, 210, 217, 219, 220, 223, 224, 227, 232, 291, 292.

FOR SENIORS AND GRADUATES

202. PHILOSOPHY OF ART.—A study of some fundamental issues in aesthetics, with particular reference to the fields of literature, music, and painting. Problems discussed include: the nature and purposes of the arts; meaning in the arts; art and morality; the role of standards in art criticism; aesthetic judgment; interpretation and evaluation. 3 s.h. (E) ASSISTANT PROFESSOR WELSH

203. CONTEMPORARY ETHICAL THEORIES.—Critical discussion and evaluation of the ethical views of twentieth century British and American philosophers. 3 s.h. (E) PROFESSOR BAYLIS

205. PHILOSOPHY OF HISTORY.—Discussion of the method, metaphysical implications, and influence of interpretations of history: Hegel, Marx, Spengler, Toynbee. 3 s.h. (w) PROFESSOR NEGLEY

208. POLITICAL PHILOSOPHY.—Analysis of the structure of social organization with particular reference to the nature of political and legal institutions. 3 s.h. (w) PROFESSOR NEGLEY

210. PHILOSOPHY OF RELIGION.—A critical and constructive study of the nature of religion, of its various forms and manifestations, and of its functions in human life. 3 s.h. (E) PROFESSOR PATTERSON

211. PLATO.—An examination of Plato's views with respect to knowledge, reality, and the state. 3 s.h. (E) PROFESSOR PATTERSON

217. ARISTOTLE.—An analysis of Aristotle's views with respect to knowledge, reality, and the state. 3 s.h. (E) PROFESSOR PATTERSON

218. MEDIEVAL PHILOSOPHY.—A study of the philosophy of the Middle Ages with special attention to selected texts from the works of Christian, Jewish and Arabian philosophers. 3 s.h. (E) PROFESSOR PATTERSON

219. KANT.—Reading and discussion of his philosophy, with some attention to historical continuity. 3 s.h. (w) PROFESSOR NEGLEY

220. THE POST-KANTIAN.—The development from Kant through Fichte and Schelling to Hegel; emphasis on the Hegelian dialectic and its influence on political and legal philosophy. 3 s.h. (w) PROFESSOR NEGLEY

222. REASON AND COMMON SENSE IN 17TH AND 18TH CENTURY BRITISH THOUGHT.—Studies in the theories of reason and sentiment following Hobbes, and the development of opposition among rational, common sense and empirical theories of knowledge and conduct. Readings in Cumberland, Shaftesbury, Hutcheson, Reid and others. 3 s.h. (E) ASSISTANT PROFESSOR PEACH

223. CONTEMPORARY PHILOSOPHY: IDEALISM.—Examination and analysis of the idealist position in recent and contemporary philosophy, with special attention to the works of F. H. Bradley and the British Idealists. 3 s.h. (w) PROFESSOR PATTERSON

224. CONTEMPORARY PHILOSOPHY: REALISM.—A critical analysis, comparison and evaluation of the several varieties of recent realistic theories, presentative and representative. 3 s.h. (E) PROFESSOR BAYLIS

225. BRITISH EMPIRICISM.—A critical study of the writings of Locke, Berkely, and Hume, with special emphasis on problems in the theory of knowledge. 3 s.h. (E) ASSISTANT PROFESSOR PEACH

227. CONTINENTAL RATIONALISM.—A critical study of the writings of Descartes, Spinoza, and Leibnitz, with special emphasis on problems in the theory of knowledge and metaphysics. 3 s.h. (E) ASSISTANT PROFESSOR PEACH

228. RECENT AND CONTEMPORARY PHILOSOPHY.—A critical study of outstanding philosophical views from Schopenhauer to the present. 3 s.h. (E) ASSISTANT PROFESSOR PEACH

229. AMERICAN PRAGMATISM.—Studies in the philosophy of Peirce, James, Dewey and Mead. 3 s.h. (E) ASSISTANT PROFESSOR WELSH

232. SPECIAL PROBLEMS IN THE PHILOSOPHY OF SCIENCE.—Selected topics concerning the methods of the sciences and the philosophy of science. 3 s.h. (E) ASSISTANT PROFESSOR CLARK

236. ORIENTAL PHILOSOPHY.—A study of the genesis of philosophical ideas in the Upanishads and the Bhagavadgita, and of the developments of the orthodox systems and of the philosophies of the Jains and the Buddhists. 3 s.h. (E) PROFESSOR PATTERSON

250. PHILOSOPHICAL ANALYSIS.—A critical study of recent and contemporary essays in philosophical analysis, and an evaluation of the nature, methods, and results of this movement. 3 s.h. (E) PROFESSOR BAYLIS AND ASSISTANT PROFESSOR BUCK

252. METAPHYSICS.—A critical and evaluative study of rival metaphysical theories and their bases. Analysis of the fundamental metaphysical categories and of metaphysical methods. 3 s.h. (E) PROFESSOR BAYLIS

291, 292. CRITICAL PHILOSOPHY.—The analysis of basic philosophical concepts and beliefs with a view to critical evaluation and constructive emendation of them. Emphasis on the practice as well as the principles of philosophical criticism

and problem solving. 3 s.h. each. Enrollment only by permission of the Department. 291 is ordinarily prerequisite for 292. (E)

PROFESSOR BAYLISS AND MEMBERS OF
THE GRADUATE STAFF

FOR GRADUATES

331, 332.—Seminars in Special Fields of Philosophy. 3 s.h. (E)

Offered as occasion arises.

ALL MEMBERS OF THE GRADUATE STAFF

(a) Logic

(b) Ethics

(c) Aesthetics

(d) Philosophy of Religion

(e) History of Philosophy

(aa) Philosophy of Science

(bb) Political Philosophy

(cc) Epistemology

(dd) Metaphysics

(ee) History of Philosophy

351, 352. SEMINAR IN THE TEACHING OF PHILOSOPHY.—Required of all candidates for the Ph.D. degree in Philosophy. Discussion of the problems of teaching philosophy at the undergraduate level. Practice teaching in occasional undergraduate sections. 1 s.h. (E)

ALL MEMBERS OF THE GRADUATE STAFF

PHYSICS

PROFESSOR NIELSEN, CHAIRMAN—119 PHYSICS BUILDING; ASSOCIATE PROFESSOR GREULING, DIRECTOR OF GRADUATE STUDIES—209 PHYSICS BUILDING; PROFESSORS GORDY, NEWSON, AND SPONER; ASSOCIATE PROFESSORS FAIRBANK AND LEWIS; ASSISTANT PROFESSORS BLOCK AND WILLIAMSON; VISITING ASSISTANT PROFESSORS BUCKINGHAM AND DUNCAN

The Department of Physics offers graduate work leading to the A.M. and Ph.D. degrees. Course work is designed to give a broad basic foundation in classical and modern physics. All graduate students will be expected to acquire a thorough knowledge of the various branches of classical physics and some familiarity with modern physics and with basic laboratory skills. They will be required to take such course work in the 200 number courses as may be necessary to obtain this foundation.

The student will be required to take such course work as will best be adapted to the kind of work he will subsequently specialize in and to the kind of research he will undertake. The choice of minor will be similarly determined.

Since a practical reading knowledge of French and German is highly desirable for the student of physics, he should satisfy these language requirements as early as possible.

For 1957-58 the courses planned are 201-202, 213-214, 217-218, 219-220, 303, 306, 315-316, 318-319, 324, 331, 351-352.

FOR SENIORS AND GRADUATES

201-202. MECHANICS.—The fundamental principles of Newtonian mechanics; general dynamics of systems of particles, and rigid bodies; the methods of Lagrange and Hamilton; generalized mechanics. Prerequisite: Physics 125. 6 s.h.

ASSISTANT PROFESSOR BLOCK

213-214. CONTEMPORARY PHYSICS.—A course which covers the fundamental concepts and the experimental basis of modern physics. Three lectures each week. 6 s.h.

ASSOCIATE PROFESSOR LEWIS

217-218. ADVANCED PHYSICS LABORATORY.—Measurements involving the fields of mechanics, electricity, magnetism, heat, sound, optics and modern physics. 2-6 s.h.

ALL MEMBERS OF THE GRADUATE STAFF

219. ELECTRICITY AND MAGNETISM.—Fundamentals of electricity and magnetism. Direct and alternating current circuits and networks, physical optics, electromagnetic waves. 3 s.h.

ASSOCIATE PROFESSOR LEWIS

220. ELECTRON TUBE CIRCUITS.—Linear circuit analysis, rectifiers, filters, linear amplifiers, feedback, noise, power amplifiers, oscillators, modulation, relaxation oscillators. 3 or 4 s.h.

ASSOCIATE PROFESSOR LEWIS AND
ASSISTANT PROFESSOR WILLIAMSON

FOR GRADUATES

303-304. THERMODYNAMICS AND STATISTICAL MECHANICS.—Fundamental laws of thermodynamics and statistical mechanics with applications to physics and chemistry. Gas laws; transport phenomena; elements of quantum statistics. 6 s.h.

ASSOCIATE PROFESSOR FAIRBANK AND VISITING
ASSISTANT PROFESSOR BUCKINGHAM

306. LOW TEMPERATURE PHYSICS.—A study of the properties of matter near the absolute zero of temperature; superconductivity, liquid helium, adiabatic demagnetization. Prerequisite: Physics 303. 3 s.h.

ASSOCIATE PROFESSOR FAIRBANK

315-316. PRINCIPLES OF QUANTUM THEORY.—Original and fundamental concepts of quantum theory; wave and matrix mechanics; theory of measurements; exclusion principle and electronic spin. Prerequisite: Physics 201-202. 6 s.h.

ASSOCIATE PROFESSOR GREULING AND VISITING
ASSISTANT PROFESSOR DUNCAN

318-319. ELECTROMAGNETIC FIELD THEORY.—Electrostatics and potential theory; dielectric and magnetic media; the magnetic field of currents and the law of induction. Maxwell's electrodynamics; theory of wave optics; refraction; interference, and diffraction. Crystal optics. Prerequisite: Physics 219. 6 s.h.

ASSOCIATE PROFESSOR GREULING

320. THEORY OF ELECTRONS.—Lorentz' equations of electrodynamics. Classical theories of dispersion, magnetism, and conductivity. Theory of relativity. Prerequisite: Physics 318-319. 3 s.h.

ASSOCIATE PROFESSOR GREULING

323. THEORY OF ATOMIC SPECTRA.—Excitation of spectra, computation of wave lengths from photographs of spectra, study of the structure of atomic spectra with applications. 3 s.h.

PROFESSOR SPONER

324. THEORY OF MOLECULAR SPECTRA.—A study of the structure of molecular spectra with applications. 3 s.h.

PROFESSOR SPONER

331. MICROWAVE RADIATION.—Microwave generators, cavity resonators, transmission lines, radiation propagation and detection. 3 s.h.

PROFESSOR GORDY

335. MICROWAVE SPECTROSCOPY.—Application of microwaves in the determination of molecular, atomic and nuclear properties. Stark and Zeeman effects in microwave spectroscopy. Magnetic resonance absorption. 3 s.h.

PROFESSOR GORDY

340. STRUCTURE OF MATTER.—Selected topics dealing with the constitution of matter, such as crystal structure and x-rays, the solid state and problems of molecular structure. 3 s.h.

PROFESSOR SPONER AND VISITING
ASSISTANT PROFESSOR BUCKINGHAM

341. ADVANCED TOPICS IN QUANTUM THEORY.—Quantum theory of radiation and collisions with special reference to nuclear and high energy physics. Prerequisite: Physics 315-316. 3 s.h.

VISITING ASSISTANT PROFESSOR DUNCAN

343. NUCLEAR PHYSICS.—Elementary theory of the deuteron; low energy neutron proton scattering; theory of nuclear reactions; penetration of potential barriers; nuclear energy levels. Prerequisite: Physics 315. 3 s.h.

PROFESSOR NEWSON

344. ADVANCED NUCLEAR PHYSICS.—The deuteron, nuclear forces, scattering of elementary particles, beta-radiation. Other aspects of nuclear physics susceptible of theoretical interpretation. Prerequisite: Physics 343. 3 s.h.

351-352. SEMINAR.—A series of weekly discussions on topics related to the research projects under investigation in the Department. 2 s.h.

ALL MEMBERS OF THE GRADUATE STAFF

POLITICAL SCIENCE

PROFESSOR RANKIN, CHAIRMAN—308 LIBRARY; PROFESSOR WILSON, DIRECTOR OF GRADUATE STUDIES—405 NEW TOWER, LIBRARY; PROFESSORS COLE, CONNERY AND HALLOWELL; ASSOCIATE PROFESSOR BRAIBANTI

The Department of Political Science offers graduate work leading to the A.M. and Ph.D. degrees. Instruction is designed to prepare the student for teaching, for government service, and for other work related to public affairs. Before undertaking graduate study in political science, a student is ordinarily expected to have completed at least 12 semester hours of course work in political science, including some work in American government.

Fields of political science in which instruction is at present offered for candidates for the degree of Doctor of Philosophy are the following: American Government and Constitutional Law; Comparative Government; Political Theory; American State and Local Government; International Law; Public Administration. Candidates for the degree of Doctor of Philosophy who propose to major in political science must elect five fields, including Comparative Government and Political Theory; at least one of the five fields must be taken in a department other than the Department of Political Science.

In 1957-58 the courses planned are 207, 209, 211, 212, 221, 223, 224, 225, 226, 227-228, 229, 230, 231, 235, 241, 246, 291, 310, 311, 321, 325, 328, 341, and 401.

FOR SENIORS AND GRADUATES

207. AMERICAN CONSTITUTIONAL LAW AND THEORY.—A study of leading principles of American government, as developed through judicial interpretation of the Constitution. 3 s.h. PROFESSOR RANKIN

209. PROBLEMS IN STATE AND LOCAL GOVERNMENT IN THE UNITED STATES.—A study of the historical development of state and local governments, their present organization and subdivisions, and their relation to each other. Special attention is given to the position of the states in the federal union through the study of federal-state, inter-state, and state-local relation. 3 s.h. PROFESSOR RANKIN

211. POLITICAL INSTITUTIONS OF THE FAR EAST.—An analysis of the ideas underlying the development of government in Japan, China, and Korea. Study of the writings of Lao-tse, Confucius and the sacred books of Buddhism and Shinto. Particular attention is given to the theory of Confucian bureaucracy, the Taikwa Reform, the development of the Tokugawa administrative state, the constitutional reforms of Sun Yat-sen in China and of the Meiji Era in Japan. 3 s.h. ASSOCIATE PROFESSOR BRAIBANTI

212. INTERNATIONAL POLITICS OF THE FAR EAST.—An analysis of the relations of China, Japan, and Korea *inter se* and with outside powers, with emphasis upon changing power relationships within the Asian cultural sphere. 3 s.h. ASSOCIATE PROFESSOR BRAIBANTI

221. INTERNATIONAL PUBLIC ORGANIZATION.—A study of the structure and functioning of the United Nations organs, of related specialized agencies such as the International Labor Organization, and of regional agencies such as the Organization of American States. 3 s.h. PROFESSOR WILSON

223. POLITICAL THOUGHT TO THE SEVENTEENTH CENTURY.—A survey from the time of Plato to the close of the seventeenth century; Graeco-Roman, Patristic and Germanic thought; individualism and cosmopolitanism; effect of the Church-State controversy and the conciliar movement; medieval constitutionalism; legislative sovereignty. 3 s.h. PROFESSORS HALLOWELL AND WILSON

224. MODERN POLITICAL THEORY.—An historical survey and philosophical analysis of political theory from the beginning of the seventeenth to the middle of the nineteenth century. Attention is given to the rise of liberalism, the Age of Enlightenment, the romantic and conservative reaction, idealism and utilitarianism. 3 s.h. PROFESSOR HALLOWELL

225. COMPARATIVE GOVERNMENT.—A comparative study of modern political institutions and processes, with particular attention to European constitutional government and politics. 3 s.h.

PROFESSOR COLE

226. COMPARATIVE GOVERNMENT.—A comparative study of modern political institutions and processes, with particular attention to European totalitarian and authoritarian political systems. 3 s.h.

PROFESSOR COLE

227-228. INTERNATIONAL LAW.—Elements of international law, particularly as interpreted and applied by the United States; rights and duties of states with respect to recognition, state territory and jurisdiction, nationality, diplomatic and consular relations, treaties, treatment of aliens, pacific settlement of disputes, international regulation of the use of force, and collective security. 6 s.h.

PROFESSOR WILSON

229. RECENT AND CONTEMPORARY POLITICAL THEORY.—The rise of positivism and its impact upon modern political thought, the origins of socialism, Marxism and its variants, socialism in the Soviet Union, nationalism, Fascism and National Socialism, the crisis in modern democracy, Christianity and the social order. 3 s.h.

PROFESSOR HALLOWELL

230. AMERICAN POLITICAL INSTITUTIONS.—A study of the formation and development of institutions of the national government in the United States, with historical and analytical treatment. Among other topics this course is concerned with the Constitutional Convention of 1787, and the development of Congress, the Presidency, and the Supreme Court. 3 s.h.

PROFESSOR RANKIN

231. AMERICAN POLITICAL THEORY.—An analysis of the main currents in American political thought from colonial beginnings to the present day, with emphasis upon the development of liberalism in America. 3 s.h.

PROFESSOR HALLOWELL

234. CIVIL-MILITARY RELATIONSHIPS IN AMERICAN GOVERNMENT.—A consideration of the role of the military in American government both in practice and in theory. Special emphasis will be given to formal civil-military structural arrangements for determining policies such as the National Security Council, and to the degree of civilian control within the military establishment. 3 s.h.

PROFESSOR CONNERY

235. THE BRITISH COMMONWEALTH.—An analysis of the political relationships between the members of the Commonwealth and a comparative study of the governments of the Commonwealth countries, with particular reference to Canada. A course designed in part to utilize the occasional services of visiting professors from Commonwealth countries. 3 s.h.

PROFESSOR COLE

241. ADMINISTRATIVE MANAGEMENT.—An advanced course in public administration with special attention being given to the development of scientific management, its application to government in the United States and a consideration of current problems in organization, procedures, work simplification, and management improvement. 3 s.h.

PROFESSOR CONNERY

242. NATIONAL ADMINISTRATION.—A study of the administrative organization, working concepts and procedures of the United States Government, illustrated through the operations of the Bureau of the Budget. 3 s.h.

PROFESSOR CONNERY

246. GOVERNMENT ADMINISTRATION AND PUBLIC POLICY.—Through use of the laboratory and case study techniques, a consideration of the types of administrative problems that the United States Government encounters in the field of public policy, and their possible solution. 3 s.h.

PROFESSOR CONNERY

271. SOCIOPOLITICS AND CAPITALISM.—Labor and labor policies in Western Europe and the United States in the nineteenth and twentieth centuries; the development of monopoly power and political power of labor in recent decades. 3 s.h.

291. PROBLEMS OF MUNICIPAL GOVERNMENT.—An analysis of problems relating to the structural system and activities of municipalities in the United States. 3 s.h. PROFESSOR RANKIN

292. MUNICIPAL ADMINISTRATION.—A study of principles and methods relating to municipal administration in the United States. 3 s.h. PROFESSOR RANKIN

FOR GRADUATES

301-302. DEPARTMENTAL GRADUATE SEMINAR.—An introduction to research methodology, inter-disciplinary relationships and current research problems. Required of all graduate majors in political science. No credit.

PROFESSORS WILSON, RANKIN, COLE, HALLOWELL, CONNERY, BRAIBANTI,
OTHER MEMBERS OF THE FACULTY AND VISITING LECTURERS

310. SEMINAR IN STATE GOVERNMENT.—Open to students who have completed course 209 or its equivalent. 3 s.h. PROFESSOR RANKIN

311. SEMINAR IN FAR EASTERN POLITICS.—Open to students who have completed course 211 or its equivalent. 3 s.h. ASSOCIATE PROFESSOR BRAIBANTI

321. SEMINAR IN POLITICAL THEORY.—Open to students who have completed 6 semester hours in Political Science 223, 224, 229, 231 or their equivalents. 3 s.h. PROFESSOR HALLOWELL

325. SEMINAR IN COMPARATIVE GOVERNMENT.—Open to students who have completed courses 225 and 226 or their equivalents. 3 s.h. PROFESSOR COLE

328. SEMINAR IN INTERNATIONAL LAW.—Open to students who have completed course 227-228 or its equivalent. 3 s.h. PROFESSOR WILSON

341. SEMINAR IN PUBLIC ADMINISTRATION.—Directed reading, discussion and reports concerning the theory and practice of Public Administration. 3 s.h. PROFESSOR CONNERY

401. SEMINAR ON THE BRITISH COMMONWEALTH.—3 s.h.

PROFESSORS COLE, HAMILTON AND SPENGLER

RELATED COURSES IN OTHER DEPARTMENTS

Economics 233, 237-238, 315, 316, 329, 365; History 205-206, 215-216, 217-218, 233-234, 261-262; Philosophy 208; Religion 224, 394; Sociology 382.

RELATED COURSE WORK IN THE SCHOOL OF LAW

There may be graduate credit for course work completed in the Duke University School of Law, under regulations referred to on page 45 of this *Bulletin*.

PSYCHOLOGY

PROFESSOR RODNICK, CHAIRMAN—102 BIVINS HALL; PROFESSOR ZENER, DIRECTOR OF GRADUATE STUDIES—205 PSYCHOLOGICAL LABORATORY; PROFESSOR RODNICK, DIRECTOR OF CLINICAL TRAINING; PROFESSORS ADAMS, DAI, KOCH, AND KUDER; ASSOCIATE PROFESSORS BANHAM, COHEN, GARMEZY, AND KIMBLE; ASSISTANT PROFESSORS BORSTELMANN, GUTTMAN, JONES, PARSONS, SPIELBERGER, AND WILSON

The Department offers training leading to the A.M. and Ph.D. degrees with specialization in a number of areas. Training for the Ph.D. is offered in general experimental, clinical, counseling, social and industrial psychology. A program of studies leading to the A.M. degree is offered in all areas except clinical and counseling psychology.

Whatever the field of psychology in which a student eventually specializes, he is required to have a thorough background in the facts, methods, and theories of general psychology. Graduate programs are arranged to achieve this common background primarily during the first year, with specialization in course work reserved for subsequent years.

Normally, the candidate for the Ph.D. degree is expected, by the end of his second year, in addition to having worked out a program of studies, to have passed

his language examinations, a departmental qualifying examination in his area of intended doctoral research, and the preliminary examination. By this time also his doctoral dissertation subject should be formulated. Emphasis is laid upon the completion of the dissertation, directed by a member of the staff, demonstrating competence and independence in the investigation of an original and significant problem.

As an integral part of their academic work during the first, second and fourth years, students specializing in clinical or counseling psychology will undertake field work in a variety of clinical settings. In addition, they will normally spend the third year in an appropriate, approved internship. The fourth year will be spent in residence at Duke University to complete the dissertation.

The field of minor work is not restricted, but it may be pointed out that the fields most relevant to graduate study in psychology are philosophy of science, sociology and anthropology, physiology, neuroanatomy, mathematics, and education.

Further details concerning the program of studies in psychology may be obtained from the Director of Graduate Studies in Psychology.

For 1957-58 the courses planned are 201-202, 206, 209, 212, 215, 221-222, 236, 242, 265, 266, 303-304, 305, 306, 308, 309, 310, 312, 320, 322, 335-336, 341, 342, 344-345, 371.

FOR SENIORS AND GRADUATES

201-202. PROSEMINAR.—An integrated core curriculum in general psychology, designed to provide an advanced background in the principles, and the empirical and theoretical methods, of the major fields of psychology. The topics include: scientific methods in psychology, biological foundations of behavior, motivation, learning, perception, behavior development, personality, the social determinants of behavior, and contemporary psychological theories. Required of all first year students. 9 s.h. fall semester, 6 s.h. spring semester.

PROFESSORS ADAMS, KOCH, KUDER, RODNICK, AND ZENER;
ASSOCIATE PROFESSORS BANHAM AND KIMBLE; ASSISTANT
PROFESSORS GUTTMAN, JONES, AND WILSON

206. SOCIAL PSYCHOLOGY.—An examination of selected research and areas in social psychology including social perception, socialization, prejudice, and the behavioral effects of communication, interaction, and influence. 3 s.h.

ASSISTANT PROFESSOR JONES

209. EXPERIMENTAL METHODS IN PSYCHOLOGY.—A study of methods for the identification, control, and recording of essential variables in psychological situations, with emphasis upon the relation of experimental techniques to problem formulation. Laboratory, lectures, and discussions. 3 s.h.

PROFESSOR ZENER AND ALL MEMBERS OF
THE GRADUATE STAFF

212. PHYSIOLOGICAL PSYCHOLOGY.—An advanced study of the interrelationships between psychological and physiological processes. 3 s.h.

ASSISTANT PROFESSOR GUTTMAN

215. DEVELOPMENTAL PSYCHOLOGY.—The environmental forces conditioning the development of personality structure and the mechanisms contributing to psychological growth; critical periods in character formation from infancy to senescence. 3 s.h.

PROFESSOR ADAMS

221-222. PROPRACTICUM.—Lectures, demonstrations and practice in the use of basic procedures, projective and non-projective, employed in clinical psychology; principles of interpretation and reporting of test findings. Laboratory periods will be held in clinical field facilities. 3 s.h. each semester.

ASSOCIATE PROFESSOR GARMEZY AND ALL MEMBERS
OF THE CLINICAL STAFF

236. THEORETICAL PSYCHOLOGY.—This course is devoted to the analysis of techniques of theory construction in psychology. The discussion of these methodological issues is co-ordinated with the analysis of concrete formulations in contemporary psychological theory. 3 s.h.

PROFESSOR KOCH

242. MEASUREMENT OF APTITUDES, INTEREST, AND ACHIEVEMENT (also listed as Education 242).—A study of the theories and principles of psychological measurement as applied to aptitude, interest, and achievement testing. 3 s.h.
PROFESSOR KUDER

265. FUNDAMENTAL STATISTICAL APPLICATIONS IN PSYCHOLOGICAL RESEARCH.—Introduction to probability and the use of statistics in description and hypothesis testing in psychology including the following applications: correlational techniques, chi-square and t tests, distribution-free tests and one-way analysis of variance. Prerequisite: Psychology 117-118 or equivalent. 3 s.h. (Second semester.)
ASSISTANT PROFESSOR WILSON

266. ADVANCED STATISTICAL APPLICATIONS IN PSYCHOLOGICAL RESEARCH.—The basic theory and applications of analysis of variance techniques to complex experimental designs will be covered. Additional advanced techniques, including factor analysis, will be introduced. Prerequisite: Psychology 265 or equivalent. 3 s.h. (First semester.)
ASSISTANT PROFESSOR WILSON

303-304. RESEARCH.—2 or 3 s.h. ALL MEMBERS OF THE GRADUATE STAFF

305. PSYCHOPATHOLOGY.—An examination of behavior disorders, with particular emphasis on explanatory concepts and the evidence from research in this field. 3 s.h.
PROFESSOR RODNICK

306. SEMINAR IN DEVELOPMENTAL PSYCHOLOGY.—2 or 3 s.h.
PROFESSOR ADAMS

308. SEMINAR IN PSYCHOPATHOLOGY AND PERSONALITY THEORY.—3 s.h.
PROFESSOR RODNICK

309. PROBLEMS OF LEARNING.—3 s.h. ASSOCIATE PROFESSOR KIMBLE

310. SEMINAR IN PERCEPTION.—3 s.h. PROFESSOR ZENER

312. SEMINAR IN THEORETICAL PSYCHOLOGY.—3 s.h. PROFESSOR KOCH

320. SEMINAR IN THE THEORY OF MENTAL TESTS.—3 s.h.
PROFESSOR KUDER

322. SEMINAR IN PERSONNEL PSYCHOLOGY.—3 s.h. PROFESSOR KUDER

335-336. CLINICAL PSYCHOLOGY PRACTICUM.—Seminar discussion and supervised field experience in the application of basic psychological procedures and principles to clinical cases in a variety of institutional settings. Prerequisite: Psychology 221-222. 3 s.h. each semester.

ASSOCIATE PROFESSOR COHEN AND ALL MEMBERS
OF THE CLINICAL STAFF

341. SOCIETY, CULTURE AND BEHAVIOR DISORDERS.—A critical survey of current theories of the structure and genesis of psychoneurosis, with particular stress on psychoneurotic disturbances as problems of the self in relation to society and culture. 3 s.h. Second semester.
PROFESSOR DAI

342. PRINCIPLES OF PSYCHOTHERAPY.—With permission of instructor. Prerequisite: Psychology 341. 3 s.h.
PROFESSOR DAI

344-345. ADVANCED SEMINAR IN CLINICAL PSYCHOLOGY. 1 s.h. each semester.
ALL MEMBERS OF THE CLINICAL STAFF

371. PRE-SCHOOL BEHAVIOR PROBLEMS.—3 s.h.
ASSOCIATE PROFESSOR BANHAM

RELATED COURSES IN OTHER DEPARTMENTS

Education 217, 227, 228, 240, 241, 244, 248, 258; Philosophy 103, 104, 203, 208, 224, 225, 228, 232, 241, 250, 331-332; Sociology and Anthropology 93, 94, 212, 213, 214, 238, 243, 246, 271, 276, 330, 380; Zoology 151, 252, 271, 324, 328, 355-356; Physiology M261-262.

RELIGION

PROFESSOR SMITH, DIRECTOR OF GRADUATE STUDIES—308 DIVINITY SCHOOL; PROFESSORS BEACH, CLARK, CUSHMAN, PETRY, AND STINESPRING; ASSOCIATE PROFESSORS BROWNLEE AND LACY; ASSISTANT PROFESSOR SCHAFER

The Department of Religion offers graduate work leading to the A.M. and Ph.D. degrees. Students may major in one of three fields: (1) Biblical Studies; (2) Historical Studies; and (3) Systematic and Contemporary Studies. They will be expected to take such courses in one or both of the other fields as will conduce to an adequate understanding of their chosen fields of specialization.

In addition to course work in these major fields, students will take such other courses in cognate fields as will contribute to the enrichment of their major studies. For those majoring in Biblical Studies, courses in ancient language and literature are suggested; for those majoring in Historical Studies, courses in history are suggested; and for those majoring in Systematic and Contemporary Studies, courses in philosophy, political science, and sociology are suggested.

Students who intend to become candidates for the Ph.D. degree should take the required language examinations in both French and German not later than the beginning of the second year of residence.

For 1957-58 the courses planned are 201-202, 207-208, 301, 305, 310, 311, 316, 317, 318, 323, 324, 325, 326, 328, 331, 334, 370, 387, 391, 392, 393, 394, 395.

FIELD I. BIBLICAL STUDIES

201-202. FIRST HEBREW.—The principles and structure of the Hebrew language with translation of selected Old Testament narratives. 6 s.h.

PROFESSOR STINESPRING

207-208. SECOND HEBREW.—II Samuel the first semester and the Qumran Isaiah Scroll the second. 6 s.h.

ASSOCIATE PROFESSOR BROWNLEE

217. THE NEW TESTAMENT IN GREEK.—Extensive reading of the Greek text of the New Testament, with special emphasis upon its interpretation. 3 s.h.

PROFESSOR CLARK

218. GALATIANS AND I CORINTHIANS.—A detailed study of two of Paul's major epistles, based on the Greek text. 3 s.h.

PROFESSOR CLARK

220. I PETER AND THE GOSPEL OF JOHN.—A detailed study of two of the non-Pauline writings of the New Testament. The course will be based on the Greek text. 3 s.h.

301. THE RELIGIOUS THOUGHT OF POST-EXILIC JUDAISM.—A study of the development of religious ideas in Post-Exilic Judaism. 3 s.h.

ASSOCIATE PROFESSOR BROWNLEE

304. ARAMAIC.—A study of the Aramaic portions of the Old Testament, and selected passages from the Targums, Midrashes, and Talmuds. Hours to be arranged. 3 s.h.

PROFESSORS STINESPRING AND BROWNLEE

305. THIRD HEBREW.—A study of late Hebrew prose, with readings from Chronicles, Ecclesiastes, and the Mishnah. Hours to be arranged. 3 s.h.

PROFESSOR STINESPRING

306. ADVANCED HEBREW.—A course on the Dead Sea Scrolls. 3 s.h.

ASSOCIATE PROFESSOR BROWNLEE

307. SYRIAC.—A study of the script and grammar, with readings from the Syriac New Testament and other early Christian documents. Some knowledge of Hebrew and Aramaic prerequisite. 3 s.h.

PROFESSOR STINESPRING

309. HISTORY OF THE ANCIENT NEAR EAST.—A specialized study of the civilizations of Egypt, Palestine, Syria, and Mesopotamia in the light of Biblical archaeology. 3 s.h.

PROFESSOR STINESPRING

310. OLD TESTAMENT PROPHECY.—The prophetic movement in Israel with special emphasis on the prophets of the eighth century B.C. 3 s.h.

PROFESSOR STINESPRING

311. THE LIFE AND TEACHINGS OF JESUS.—A study of the events and sayings of the historical Jesus, in the light of His mission. 3 s.h. PROFESSOR CLARK

312. ADVANCED NEW TESTAMENT THEOLOGY.—An examination of the central aspects of New Testament theology. 3 s.h.

313. THE APOSTOLIC FATHERS.—A study of the Christian development from Clement of Rome to Polycarp (90-155 A.D.), with readings in the Greek text. 3 s.h. PROFESSOR CLARK

314. PATRISTIC THOUGHT.—A study of the development of early Christian doctrine to the period of Irenaeus. 3 s.h.

316. HELLENISTIC RELIGIONS.—A study of the Gentile religions in the Roman Empire, at the beginning of the Christian era. 3 s.h. PROFESSOR CLARK

317. THE SYNOPTIC GOSPELS.—A detailed study of their characteristics and contents, based upon the Greek text, with attention to their respective sources and to the development of synoptic criticism. 3 s.h. PROFESSOR CLARK

318. TEXTUAL CRITICISM OF THE NEW TESTAMENT.—A study of the scientific recovery of the Greek text on which modern versions are based; manuscript discoveries; principles of textual criticism; practice in collating original manuscripts in the Duke collection. 3 s.h. PROFESSOR CLARK

319. JUDAISM AN EARLY CHRISTIANITY.—A special study of the relation between Judaism and early Christianity. 3 s.h.

RELATED COURSES IN OTHER DEPARTMENTS

Greek 257; Latin 258; Aesthetics, Art, and Music 215, 216.

FIELD II. HISTORICAL STUDIES

224. CONCEPTIONS OF MAN IN WESTERN THOUGHT.—An analysis and interpretation of important types of philosophical and theological theory. 3 s.h. PROFESSOR CUSHMAN

321. PLATONISM AND CHRISTIANITY.—An analysis of Plato's religious philosophy and a survey of its continuing influence in Hellenistic and Christian thought. 3 s.h. PROFESSOR CUSHMAN

322. NINETEENTH CENTURY EUROPEAN THEOLOGY.—Protestant theology from Kant to Herrmann together with representative British theologians. 3 s.h. PROFESSOR CUSHMAN

323. HISTORY OF CHRISTIAN THOUGHT I.—An historical study of theology in the ancient and medieval church. 3 s.h. ASSISTANT PROFESSOR SCHAFER

324. HISTORY OF CHRISTIAN THOUGHT II.—An historical study of theology from the Reformation. 3 s.h. ASSISTANT PROFESSOR SCHAFER

330. THE CHURCH IN EUROPE SINCE 1800.—Emphasis is placed on the relation of the Church to the social, economic, and political life of Modern Europe. 3 s.h. PROFESSOR PETRY

331. THE SOCIAL MESSAGE OF THE EARLY AND MEDIEVAL CHURCH.—A study of the social teachings and contributions of the Christian Church prior to the Protestant Reformation. 3 s.h. PROFESSOR PETRY

332. THE MEDIEVAL CHURCH.—Outstanding characteristics of the Medieval Church, emphasizing theory, polity, institutions, sacraments, and worship. 3 s.h. PROFESSOR PETRY

334. CHURCH REFORMERS AND CHRISTIAN UNITY.—The work of such reformers as Marsilius of Padua, William of Ockham, Jean Gerson, Pierre d'Ailly, and Nicholas of Cusa in relation to ecclesiastical schism and the search for Christian unity through representative councils. 3 s.h. PROFESSOR PETRY

336. CHRISTIAN MYSTICISM IN THE MIDDLE AGES.—Source studies, in historical perspective, of such late medieval mystics as Bernard of Clairvaux, the Victorines, Ramon Lull, Meister Eckhart, Richard Rolle, Catherine of Siena, and Nicholas of Cusa. 3 s.h.
PROFESSOR PETRY

370. SEMINAR: JONATHAN EDWARDS.—A critical analysis of Edwards' major theological works. 2 s.h.
PROFESSOR SMITH

387. CHRISTIAN ETHICS AND SOCIAL PHILOSOPHY.—Selected social philosophies from Locke to Sumner analyzed from the standpoint of Christian ethics. 3 s.h.
ASSOCIATE PROFESSOR LACY

391. HISTORICAL TYPES OF CHRISTIAN ETHICS I.—A critical study of representative statements of Christian ethical theory, through the early Reformation. 3 s.h.
PROFESSOR BEACH

392. HISTORICAL TYPES OF CHRISTIAN ETHICS II.—A continuation of C.E. 391, from the Reformation through current Christian ethical theory. Prerequisite: C.E. 391. 3 s.h.
PROFESSOR BEACH

395. CHRISTIAN THOUGHT IN COLONIAL AMERICA.—Exposition of the main currents in Protestant Theology. 3 s.h.
PROFESSOR SMITH

396. CHRISTIAN THOUGHT IN NINETEENTH-CENTURY AMERICA.—Comparative study of Orthodoxy and Liberalism. 3 s.h.
PROFESSOR SMITH

FIELD III. SYSTEMATIC AND CONTEMPORARY STUDIES

320. SEMINAR: FRIEDRICH SCHLEIERMACHER.—Critical examination of the dogmatic system. 2 s.h.
PROFESSOR CUSHMAN

325. PHILOSOPHICAL THEOLOGY I.—Main problems in the history of philosophical theology. 3 s.h.
PROFESSOR CUSHMAN

326. PHILOSOPHICAL THEOLOGY II.—Prolegomena to the system of Christian Theology. 3 s.h.
PROFESSOR CUSHMAN

328. TWENTIETH-CENTURY EUROPEAN THEOLOGY.—Critical examination of the thought of selected representative theologians. 2 s.h.
PROFESSOR CUSHMAN

372. SEMINAR: THEOLOGY OF PAUL TILLICH.—An examination of Tillich's philosophical theology. 2 s.h.
PROFESSORS SMITH AND SCHAFER

389. CHRISTIAN ETHICS AND CONTEMPORARY CULTURE.—A study of the interaction between Christian thought and current secular social theory. 3 s.h.
PROFESSOR BEACH

390. CURRENT PROBLEMS IN CHRISTIAN ETHICAL THEORY.—A critical study, seminar style, of dominant issues in Christian ethics, through an analysis of a variety of contemporary Christian treatments of such problems as love, justice, community and vocation. 3 s.h.
PROFESSOR BEACH

393. THE CHRISTIAN INTERPRETATION OF HISTORY.—A comparative examination of the chief secular and Christian theories of history current in Western thought. 3 s.h.
PROFESSOR BEACH

394. CHRISTIANITY AND THE STATE.—The relation of the Christian theory of the State to political problems, with special consideration of the religious assumptions underlying democratic theory and practice and of the relationship of church to state. 3 s.h.
PROFESSOR BEACH

397. CONTEMPORARY AMERICAN THEOLOGY.—Critical appraisal of major tendencies. 3 s.h.
PROFESSOR SMITH

ROMANCE LANGUAGES

PROFESSOR JORDAN, CHAIRMAN—214 CARR; PROFESSOR WALTON, DIRECTOR OF GRADUATE STUDIES—207 GRAY; PROFESSORS DAVIS AND PREDMORE; ASSOCIATE PROFESSORS CASTELLANO AND DOW AND FEIN; ASSISTANT PROFESSOR VINCENT

The Department of Romance Languages offers graduate work leading to the A.M. and Ph.D. degrees. In order to undertake graduate study in this Department, the student should normally have credit for four years of college courses in the chosen language, or 18 semester hours beyond the conventional two units offered at entrance to college. In addition to this minimum requirement, the student should have had one semester of review in composition and grammar.

It is recommended that candidates for the A.M. degree take a second Romance Language as the minor subject.

A candidate for the Ph.D. degree should be equipped to follow graduate courses in a second Romance Language. For this degree some training in Romance Linguistics will be required, the amount to be determined by the Department upon consideration of the student's preparation in the field.

Graduate students in this Department will be required to maintain oral practice in their major language through non-credit exercises provided by the Department.

The courses planned for 1957-58 are: French 215-216, 219, 220, 227, 238; Spanish 257, 260, 261, 264, 270, 276; and Romance Languages 218.

FRENCH

FOR SENIORS AND GRADUATES

213. FRENCH CLASSICISM.—Its initial phase. Readings from Malherbe, Molière, Racine, Boileau, La Fontaine, La Rochefoucauld, Madame de Sévigné, La Bruyère, and others. 3 s.h.

PROFESSOR WALTON

214. FRENCH CLASSICISM.—Its final phase. Readings from Fontenelle, Saint-Simon, Abbé Prévost, Marivaux, Lesage, Montesquieu, Voltaire, and others. The main emphasis is on Voltaire. 3 s.h.

PROFESSOR WALTON

215, 216. THE MODERN FRENCH NOVEL.—A survey of the novel form from the seventeenth to the twentieth century, with particular attention to the analysis of fundamental literary trends; classicism, rationalism, romanticism, and realism. 6 s.h.

PROFESSOR JORDAN

219, 220. OLD FRENCH LANGUAGE AND LITERATURE.—Reading and discussion of representative texts of the Medieval Period accompanied by a study of the evolution of the language. 6 s.h.

ASSISTANT PROFESSOR VINCENT

227. FRENCH POETRY SINCE THÉOPHILE GAUTIER.—Readings from the principal figures of the Parnassian and Symbolist movements, including Baudelaire, Leconte de Lisle, Heredia, Verlaine, Rimbaud, Mallarmé and Régnier. 3 s.h.

PROFESSOR WALTON

238. ANATOLE FRANCE.—An analysis of the principal phases of his work and its relation to the French tradition. Reading of his poetry, *Le Crime de Sylvestre Bonnard*, *Thaïs*, *Le Jardin d'Epicure*, *Les Dieux ont Soif*, *Le Lys Rouge*, *L'Île des Pingouins*, parts of *La Vie Littéraire*. 3 s.h.

PROFESSOR WALTON

FOR GRADUATES

323, 324. REALISM AND NATURALISM.—Literary doctrines and practices in the generation of 1850-90, with particular reference to the background of scientific thinking. 6 s.h.

PROFESSOR JORDAN

325, 326. FRENCH LITERATURE IN THE SIXTEENTH CENTURY.—The main attention is given to Rabelais, Montaigne, Marot, Ronsard, Du Bellay. The principal movements treated are: Humanism, Hellenism, Platonism, Petrarchism, the Pléiade. 6 s.h.

PROFESSOR WALTON

333, 334. CONTEMPORARY FRENCH LITERATURE.—The twentieth century is examined mainly with reference to the originality of its contribution in the domain of ideas and literary forms. Only the leading figures are read extensively: Rolland, Gide, Proust, Duhamel, Valéry. 6 s.h. PROFESSOR JORDAN

350. NINETEENTH-CENTURY FRENCH CRITICISM.—A survey of critical doctrines and practices from Sainte-Beuve to the end of the century, including Brunetière, Faguet, Lemaître, France, Doumic and others. 3 s.h. PROFESSOR JORDAN

SPANISH

FOR SENIORS AND GRADUATES

255. MODERN LATIN AMERICAN LITERATURE.—The coming of age of Latin American literature in the nineteenth and twentieth centuries, with particular attention to the Modernist movement. 3 s.h. ASSOCIATE PROFESSOR FEIN

256. CONTEMPORARY LATIN AMERICAN LITERATURE.—Trends in Latin American literature after the Modernist movement. Analysis of significant works in various genres. 3 s.h. ASSOCIATE PROFESSOR FEIN

257. OLD SPANISH LANGUAGE.—The historical development of the language together with illustrative readings. 3 s.h. PROFESSOR DAVIS

258. OLD SPANISH LITERATURE.—The literature of the Middle Ages and Early Renaissance. 3 s.h. PROFESSOR DAVIS

260. ADVANCED COMPOSITION AND SYNTAX.—Study of fundamental difficulties in the language; practice in writing idiomatic Spanish; exercises in free composition. For students who have a satisfactory command of Spanish grammar and fair conversational ability. Prerequisite: Spanish 173-174 or permission. 3 s.h. PROFESSOR CASTELLANO

261. NINETEENTH CENTURY NOVEL.—A study of literary and social trends in the last half of the nineteenth century. Readings will be selected from the novels of Valera, Pereda, Galdós, Pardo Bazán, Blasco Ibáñez, and their contemporaries. 3 s.h. PROFESSOR DAVIS

264. MODERN AND CONTEMPORARY SPANISH THEATER.—A brief review of the modern and contemporary Spanish Theater from the period of Romanticism. Lectures, reading and discussion of the most representative works of Benavente, los hermanos Quintero, García Lora, Casona, etc. 3 s.h. PROFESSOR CASTELLANO

265. GOLDEN AGE LITERATURE: CERVANTES.—The life and thought of Cervantes with special emphasis on his *Quijote*. 3 s.h. PROFESSOR PREDMORE

266. GOLDEN AGE LITERATURE: THE DRAMA.—Study of the chief Spanish dramatists of the seventeenth century with readings of representative plays of this period. 3 s.h. PROFESSOR CASTELLANO

270. THE SPANISH LANGUAGE IN AMERICA.—The development of the Spanish language from the time of the Discovery to the present. 3 s.h. PROFESSOR PREDMORE

275. CONTEMPORARY SPANISH LITERATURE.—The Essay and Lyric Poetry. A study of the revision of national values and literary expression in the twentieth century with particular reference to the crisis of 1898 and to the enrichment of the Spanish tradition through extra-peninsular influences. 3 s.h. PROFESSOR PREDMORE

276. CONTEMPORARY SPANISH LITERATURE.—The Novel. A study of tradition and innovation in the twentieth century Spanish novel with emphasis on the novels of Unamuno, Baroja, Valle Inclán, and Pérez de Ayala. 3 s.h. PROFESSOR PREDMORE

THE TEACHING OF ROMANCE LANGUAGES

218. EVALUATION OF OBJECTIVES AND METHODS. A study of the practical problems involved in teaching on the elementary, secondary, and college levels. Analysis of textbooks, special foreign language programs, audiovisual aids. Critical examination of modern techniques of written and oral testing. 3 s.h. ASSOCIATE PROFESSOR DOW

RUSSIAN

ASSISTANT PROFESSOR WINNER

No graduate degree is presently offered in Russian. The following courses may serve in the minor programs of students in other departments.

201, 202. THE NOVELISTS OF NINETEENTH CENTURY RUSSIA.—The principal writers discussed are Pushkin, Lermontov, Gogol, Goncharov, Saltykov-Shchedrin, Turgenev, Dostoevsky and Tolstoy. Discussion of the main cultural currents of the period. Attention is given to the literary relations between Russia and the West. Extensive readings in English translation. Lectures, oral reports and term paper each semester. A knowledge of Russian not required. 6 s.h.

ASSISTANT PROFESSOR WINNER

SOCIOLOGY AND ANTHROPOLOGY

PROFESSOR JENSEN, CHAIRMAN—215E SOCIAL SCIENCE BUILDING; PROFESSOR HART, DIRECTOR OF GRADUATE STUDIES—215D SOCIAL SCIENCE BUILDING; PROFESSOR THOMPSON; ASSOCIATE PROFESSORS LABARRE AND SCHETTLER; ASSISTANT PROFESSOR ROY

The Department of Sociology and Anthropology offers graduate work leading to the A.M. and Ph.D. degrees. Before undertaking advanced work in this department, a student must have completed a minimum of twelve semester hours of approved preliminary courses in the field, and twelve additional semester hours in the field or in related work. A student who is deficient in the minimum required work will be asked to take additional undergraduate courses agreed upon in conference with the Director of Graduate Studies.

Candidates for advanced degrees in sociology usually take minor work in psychology, economics, political science, education, history, or religion. Detailed requirements for the minor work, and for majors in other departments who wish to present sociology as minor work, may be obtained from the Director of Graduate Studies.

The courses planned for 1957-58 are 212, 213, 214, 235, 237, 238, 245, 248, 250, 261, 271, 273, 276, 292, 293, 330, 340, 380, 381, 382. Either 91-92, 93 or 94, or 101 is prerequisite for all courses.

ANTHROPOLOGY

212. PRIMITIVE RELIGION.—The ethnography, the social functions and the socio-psychological meanings of religion in primitive societies. 3 s.h.

ASSOCIATE PROFESSOR LABARRE

213. PERSONALITY AND SOCIETY.—The sociology and social psychology of human personality, its origins in the primary group, its nature and varieties and its integrations into secondary group institutions. 3 s.h.

ASSOCIATE PROFESSOR LABARRE

214. PERSONALITY AND CULTURE.—The influence of culture patterns and social institutions upon character structure, socialization of the individual, and the dynamics of human personality. Comparative anthropological materials will be drawn upon. Prerequisite: course 213. 3 s.h.

ASSOCIATE PROFESSOR LABARRE

330. SEMINAR IN ANTHROPOLOGY.—A seminar for advanced students who wish to pursue individual studies in racial or cultural anthropology. 1 to 3 s.h. each semester.

ASSOCIATE PROFESSOR LABARRE

COMMUNITY, RACE AND CULTURE

233. RURAL SOCIOLOGY.—The sociology of the land; peasant and folk societies and cultures; patterns of rural settlement like the farm, the plantation, the ranch and others; rural personality types; the changing character of rural life; rural problems. 3 s.h. Second semester.

PROFESSOR THOMPSON

235. URBAN SOCIOLOGY.—A study of the city and civilization, the newspaper, the social survey, the slum and housing, neighborhoods and natural areas, urban institutions, urban problems, and city planning. 3 s.h.

PROFESSOR THOMPSON

237. **COMMUNITY AND SOCIETY.**—This course seeks to provide a frame of reference for the analysis and ordering of facts pertaining to the diverse cultures of the world, the State, the world community, the Great Society, news, mass behavior, social problems, races and classes. 3 s.h. PROFESSOR THOMPSON

238. **RACE AND CULTURE.**—A study of the nature of race and of the relationships and problems of race. 3 s.h. PROFESSOR THOMPSON

262. **EDUCATION AND THE CULTURAL PROCESS.**—A study of education (1) as carried on traditionally among preliterate and folk peoples, and (2) as it becomes a problem in racially and culturally complex societies like that of the United States. 3 s.h. (w) PROFESSOR THOMPSON

340. **SEMINAR.**—Methodological problems involved in the study of race relations, urban and rural life, the South and society generally. 3 s.h. *each semester.* PROFESSOR THOMPSON

COLLECTIVE BEHAVIOR

243. **SOCIAL ATTITUDES AND COLLECTIVE BEHAVIOR.**—Study of attitudes as products of social interaction; organization of attitudes into personal behavior patterns; expression of social attitudes in social, political and industrial groups; social unrest and the behavior of crowds and mobs; analysis of social movements, strikes, revolutions, and other group organizations. 3 s.h.

ASSOCIATE PROFESSOR SCHETTTLER

245. **THE SOCIOLOGY OF PERSONALITY DISORGANIZATION AND ADJUSTMENT.**—A sociological approach to the disorganization of personality with special emphasis upon the personality maladjustments resulting from different types of social situations, and the sociological techniques of personality reorganization and adjustment. 3 s.h. (w) ASSOCIATE PROFESSOR SCHETTTLER

246. **PUBLIC OPINION AND PROPAGANDA.**—Nature and development of public opinion; relation to attitudes, biases, stereotypes and controversial issues; role of leaders, pressure groups and minority groups; use of radio, press, motion picture and graphic arts; propaganda and censorship; measurements of public opinion. 3 s.h. ASSOCIATE PROFESSOR SCHETTTLER

248. **PRESSURE GROUPS AND PUBLIC RELATIONS.**—A study of the nature and activities of pressure group organizations in the fields of business, industry, politics, education, religion, patriotism, etc., that seek to influence public opinion, with special attention being given to the roles and functions of public relations counsellors and lobbyists. 3 s.h. (w) ASSOCIATE PROFESSOR SCHETTTLER

250. **MARRIAGE AND THE FAMILY.**—An analysis of contemporary marriage and family experience with emphasis on its functions, problems, resources and values. 3 s.h.

SOCIAL ORGANIZATION AND DISORGANIZATION

261. **PROBLEMS IN INDUSTRIAL SOCIOLOGY.**—Sociological analysis of human relations problems that confront administrators of industrial institutions and leaders in industrial community life. In this course emphasis falls on the examination of concrete case materials and the appraisal of published research with consideration of possibilities for further development of scientific procedures in the field of industrial sociology. 3 s.h. ASSISTANT PROFESSOR ROY

271. **SOCIAL PATHOLOGY.**—A study of the causes, extent, significance, and constructive treatment of the principal forms of pathology in modern society; natural disasters, poverty, physical defectiveness, malnutrition, mental deficiency, mental disease, undirected leisure activities and unstandardized commercial recreation, alcoholism, prostitution, vagrancy, and delinquency. (Not open to students who have had Sociology S274.) 3 s.h. PROFESSOR JENSEN

273. **SPECIAL PROBLEMS IN SOCIAL PATHOLOGY.**—Research projects in social and personal disorganization, limited to advanced students with the approval of the instructor. 1 to 3 s.h. *each semester.* PROFESSOR JENSEN

276. CRIME AND DELINQUENCY.—A study of the original tendencies of man and the problem of socializing these tendencies; the relation of physical and mental defectiveness and untoward influence in the home and neighborhood to crime; the development of criminological theory and procedure, emphasizing penal and reform methods, and especially modern methods of social treatment and prevention of crime. 3 s.h.

PROFESSOR JENSEN

380. SEMINAR IN APPLIED SOCIOLOGY.—Special research problems in social pathology, child welfare, criminology, and related topics. 1 to 3 s.h. *each semester*.

PROFESSOR JENSEN

SOCIAL THEORY

286. SOCIAL ETHICS.—A study of sociological fundamentals underlying ethics, including the controversy between materialistic and idealistic social thinkers, the nature of personalities and of social organization, the nature of social values, types of social interaction and their effects upon general social values, underlying principles and facts of social change, and the bearings of all these upon certain social problems. 3 s.h.

288. CONTEMPORARY PROBLEMS IN CULTURAL LAG.—An exploration of such sociological problems as social evolution, cultural lag, conflict, accommodation, leadership, and social reform, in relation to the crisis of civilization precipitated by the development of the atomic bomb and by kindred discoveries and inventions. 3 s.h.

381. PRINCIPLES OF SOCIOLOGY.—A critical study of sociological theory. The sociological theories of recent writers will be critically examined with a view to laying the foundation for a constructive theory of the social life in modern biology and psychology. Discussions and papers by the class. 3 s.h.

PROFESSOR JENSEN

382. HISTORY OF SOCIOLOGICAL THEORY.—Lectures on the development of social thought from Aristotle to the present; the social philosophies of Plato, Aristotle, St. Augustine, Thomas Aquinas, Machiavelli, Bodin, Hobbes, Locke, Vico, Montesquieu, Rousseau, Condorcet, and the sociological systems of Comte, Spencer, Schäffle, Lilienfeld, Gumplowicz, Ratzenhofer, and Ward will, among others, be considered. A large amount of assigned reading will be required in this course. The student is advised to correlate this course with related courses in economics, history, political science, and philosophy. 3 s.h.

PROFESSOR JENSEN

METHODS OF SOCIAL RESEARCH

292. STATISTICAL TECHNIQUES IN SOCIOLOGY.—Intended for graduate students, and for undergraduates who are ready to undertake original statistical research projects. 3 s.h. (*first semester*.)

293. SPECIAL PROBLEMS IN SOCIAL STATISTICS.—Applications of statistical techniques to specific research topics; limited to advanced students with permission of the instructor. 1 to 3 s.h.

391. SEMINAR IN SOCIAL STATISTICS.—Special research problems in social statistics, social ethics, the family or related topics. 1 to 3 s.h.

393. OPERATIONAL SOCIOLOGY.—A seminar for advanced students, presenting an operational philosophy of social science as a basis for research in sociology. Examples of operational procedure will be analyzed. Assigned projects will embody applications of the operational method. Prerequisite: one of the following: Sociology 292 or Economics 237-238, or Education 209, or Mathematics 124, or some other acceptable course in statistics. 3 s.h.

RELATED COURSES IN OTHER DEPARTMENTS

Economics 215, 216, 217; Philosophy 205; Political Science 223, 224; Psychology 206.

ZOOLOGY

PROFESSOR WILBUR, CHAIRMAN—224 BIOLOGY BUILDING; PROFESSOR SCHMIDT-NIELSEN,
DIRECTOR OF GRADUATE STUDIES—337 BIOLOGY BUILDING; PROFESSORS GRAY AND
BOOKHOUT; ASSOCIATE PROFESSORS BAILEY, HORN, HUNTER, AND
ROBERTS; ASSISTANT PROFESSORS LIVINGSTONE, NACE,
SANDEEN, VERNBERG, AND WARD

To undertake study toward an advanced degree in zoology a student should have completed an undergraduate major in zoology or its equivalent. This normally amounts to twenty-four or more hours of course work distributed among various fields of zoology, and must include comparative vertebrate anatomy or vertebrate zoology, embryology, and physiology. At least a year of chemistry is required. Physics is recommended. Candidates for the doctorate will be expected to have had not less than two years of chemistry and a year of botany. For some phases of zoology, organic chemistry is essential.

Required work for the A.M. ordinarily includes 18 semester hours of advanced course work in zoology, six semester hours of course work in a minor department, and an acceptable thesis.

Candidates for the Ph.D. degree are expected to be broadly trained zoologists. The program of each candidate is determined by a committee which reviews previous training and sets specific requirements to be met. Normally the program includes one or more graduate courses in each of several fields of zoology; courses in a minor subject; wide reading in science in general and in biology in particular; research; and a dissertation based on original work. A first draft of the thesis must be submitted to the major professor by March 15 of the year in which the degree is to be conferred.

For 1957-58 the courses planned are 204, 222, 224, 245, 252, 271, 276, 303, 307, 328, 351-352, 353-354, 355-356.

FOR SENIORS AND GRADUATES

204. ADVANCED PARASITOLOGY.—Lectures, conferences, readings, and laboratory work dealing with practical and theoretical problems of classification, morphology, and host relations of animal parasites. Prerequisite: Zoology 161 or equivalent. 4 s.h. ASSOCIATE PROFESSOR HUNTER

216. LIMNOLOGY.—A study of lakes, ponds and streams, including their origin, development, geochemistry, energy balance, productivity, and the dynamics of the plant and animal communities living in them. Lectures, field trips, laboratory work. Prerequisites: Chemistry 1 and 2, Physics 1 and 2, Mathematics 51, and one year of biology; or permission of instructor. 4 s.h. ASSISTANT PROFESSOR LIVINGSTONE

222. ENTOMOLOGY.—Anatomy, physiology, embryology, and classification of insects. Prerequisite: one year of zoology. 4 s.h. PROFESSOR GRAY

224. VERTEBRATE ZOOLOGY.—A study of the life histories, adaptations, ecology, and classification of vertebrate animals. Prerequisite: Zoology 53. 4 s.h. ASSOCIATE PROFESSOR BAILEY

238. SYSTEMATIC ZOOLOGY.—The fundamental theory and practice involved in the collection, identification and classification of animals. Prerequisite: Zoology 1 and 2. 4 s.h. ASSOCIATE PROFESSOR BAILEY

245. RADIATION BIOLOGY.—An introductory course which deals with the basic physical, chemical and biological principles upon which the study of the biological effects of radiation is based. Laboratory work and lectures. Prerequisites: Mathematics through trigonometry, college physics, inorganic and organic chemistry. 4 s.h.

252. COMPARATIVE PHYSIOLOGY.—The physiological mechanisms of animals studied on a comparative basis. Prerequisite: Zoology 151 or equivalent. 4 s.h. PROFESSOR SCHMIDT-NIELSEN

253. **ADVANCED VERTEBRATE MORPHOLOGY.**—Descriptive and experimental studies in comparative vertebrate morphogenesis. Lectures, readings, reports and laboratory. Prerequisites: Zoology 53, 92. 4 s.h. ASSOCIATE PROFESSOR HORN

271. **CELLULAR PHYSIOLOGY.**—The physiological processes of living matter approached through studies of cells. Prerequisites: two years of biology and at least one year of chemistry. 4 s.h. PROFESSOR WILBUR

274. **INVERTEBRATE ZOOLOGY.**—A study of structure, functions, and habits of invertebrate animals under normal and experimental conditions. Field trips will be made to study, collect, and classify animals in their natural habitats. Prerequisites: Zoology 1 and 2. 4 s.h. PROFESSOR BOOKHOUT

276. **PROTOZOOLOGY.**—The morphology, physiology, taxonomy, and culture of protozoa. Prerequisites: Zoology 1 and 2. 4 s.h. PROFESSOR BOOKHOUT

278. **INVERTEBRATE EMBRYOLOGY.**—Lectures, readings and laboratory work dealing with rearing, development and life history of invertebrates. Prerequisite: Zoology 92. 4 s.h. PROFESSOR BOOKHOUT

FOR GRADUATES

303. **ECOLOGY.**—Relation of animals to environment. Lectures, readings, reports, conferences; laboratory and field work. 4 s.h. PROFESSOR GRAY

307. **FOUNDATIONS OF ZOOLOGY.**—Lectures, readings, and discussions on the background and training essential for a professional zoologist. 2 s.h. ALL MEMBERS OF THE GRADUATE STAFF

324. **ADVANCED PHYSIOLOGY.**—Recent advances in physiology. Lectures, conferences and laboratory work. Prerequisite: Zoology 252 or 271. 4 s.h. PROFESSORS SCHMIDT-NIELSEN AND WILBUR

328. **EXPERIMENTAL EMBRYOLOGY.**—Lectures, readings, reports and laboratory work. Prerequisites: Zoology 53, 92, 156, 271, or equivalent. 4 s.h. ASSISTANT PROFESSOR NACE

343. **CYTOLOGY.**—The structure of the cell. Lectures, readings, reports and laboratory work. Prerequisites: Zoology 53, 92, 156, or equivalent. 4 s.h. ASSOCIATE PROFESSOR ROBERTS

351, 352. **ZOOLOGICAL JOURNAL CLUB.**—A weekly meeting of graduate students and faculty to hear reports and to discuss biological facts, theories, and problems. One hour a week throughout the year. No credit. ALL MEMBERS OF THE GRADUATE STAFF

353, 354. **RESEARCH.**—Students who have had proper training may carry on research under direction of members of the Staff in the following fields. Hours and credits to be arranged.

(a) **EMBRYOLOGY.**

ASSISTANT PROFESSOR NACE

(b) **PHYSIOLOGY.**

PROFESSORS SCHMIDT-NIELSEN AND WILBUR,
ASSISTANT PROFESSOR SANDEEN

(c) **HISTOLOGY, CYTOLOGY.**

ASSOCIATE PROFESSOR ROBERTS

(d) **INVERTEBRATE ZOOLOGY, INVERTEBRATE EMBRYOLOGY.**

PROFESSOR BOOKHOUT

(e) **ECOLOGY, ENTOMOLOGY, VERTEBRATE ZOOLOGY.**

PROFESSOR GRAY

(f) **VERTEBRATE MORPHOLOGY AND MORPHOGENESIS.**

ASSOCIATE PROFESSOR HORN

(g) **PARASITOLOGY.**

ASSOCIATE PROFESSOR HUNTER

(h) **VERTEBRATE ZOOLOGY, SYSTEMATIC ZOOLOGY.**

ASSOCIATE PROFESSOR BAILEY

(i) **LIMNOLOGY, OCEANOGRAPHY.**

ASSISTANT PROFESSOR LIVINGSTONE

(j) **ECOLOGY.**

ASSISTANT PROFESSOR VERNBERG

(k) **GENETICS.**

ASSISTANT PROFESSOR WARD

355, 356. SEMINAR.—One or more seminar courses in particular fields are given each semester by various members of the staff. These will be in the fields indicated under courses 353-354 above. 2 s.h.

GRADUATE CREDIT FOR COURSES TAKEN IN THE SCHOOL OF LAW

Upon the recommendation of the Director of Graduate Studies, and upon the approval of the Dean of the Graduate School, students in the Social Sciences may take certain courses in the School of Law for graduate credit. In exceptional instances courses in the School of Law may be considered as fulfilling a student's requirements for a minor.

COURSES IN THE MEDICAL SCHOOL OPEN TO GRADUATE STUDENTS

PROFESSORS BEARD, F. BERNHEIM, CONANT, EADIE, EVERETT, HALL, HANDLER, HETHERINGTON, MARKEE, D. T. SMITH, AND TAYLOR; ASSOCIATE PROFESSORS BECKER, M. L. C. BERNHEIM, DUKE, PEELE, PENROD, RUNDLES, AND SCHWERT; ASSISTANT PROFESSORS HULL AND KAMIN; VISITING LECTURER LARSH

The facilities of the several Departments of the Medical School listed below are available to qualified graduate students, already admitted to the Graduate School, for independent or supervised research and investigation, whether or not they are working toward advanced degrees.

Graduate students wishing to pursue a major or minor in any of the following departments, or to enroll in any of the courses listed below, should consult or write the appropriate Director of Graduate Studies: Anatomy, Professor J. E. Markee; Microbiology, including Mycology, Parasitology and Hematology, Professor N. F. Conant; Biochemistry and Nutrition, Professor Philip Handler; Physiology and Pharmacology, Professor F. G. Hall.

Because of the special schedules maintained in the Medical School, graduate students should write the Director of Graduate Studies of the department in which they are interested to ascertain the precise dates when courses are offered.

ANATOMY

Completion of training equivalent to that required of an undergraduate majoring in biology or zoology is prerequisite for these courses in human anatomy.

M201. GROSS HUMAN ANATOMY.—A course especially designed for graduate students, comprising a complete dissection of the cadaver. The laboratory work is supplemented by conferences which place emphasis on the biological aspects of the subject. Oct.-Feb. Hours and credits (maximum 8 s.h.) by arrangement. Prerequisite: adequate training in comparative anatomy and embryology.

PROFESSORS MARKEE AND EVERETT; ASSOCIATE PROFESSORS BECKER AND DUKE

M202. MICROSCOPIC ANATOMY.—Conferences and laboratory work on the morphological characteristics of the tissues of the animal body. The work is based upon a study of fresh and prepared material and is approached from the physiological viewpoint. Oct.-Feb. Hours and credits (maximum 3 s.h.) by arrangement. Prerequisite: adequate training in histology or cytology.

PROFESSORS MARKEE, HETHERINGTON, AND EVERETT; ASSOCIATE PROFESSORS BECKER AND DUKE

M203. ANATOMY OF THE NERVOUS SYSTEM.—A study of the gross and microscopic structure of the human central nervous system, special attention being paid to the structural and functional relationships between the various nuclei and fiber tracts. Oct.-Feb. Hours and credits (maximum 4 s.h.) by arrangement. Prerequisite: Anatomy M201.

PROFESSORS MARKEE AND EVERETT; ASSOCIATE PROFESSORS PEELE, BECKER, AND DUKE

M204. NEUROANATOMICAL BASIS OF BEHAVIOR.—A study of the gross and microscopic anatomy of the nervous system with emphasis on the structural and functional relationships between tracts, nuclei, and cortical areas. Insofar as possible the result of deficit in a system or systems will be demonstrated by motion picture aids, and the mechanisms involved will be reviewed and discussed. Restricted to graduate students with the equivalent of a major in psychology. 3 s.h.

PROFESSOR HETHERINGTON

M312. RESEARCH.—Individual investigations in the various fields of anatomy. Credits to be arranged.

PROFESSORS MARKEE, EVERETT, HETHERINGTON;
ASSOCIATE PROFESSORS PEELE, DUKE, AND BECKER

BIOCHEMISTRY AND NUTRITION

The program of graduate studies in biochemistry is designed primarily for Ph.D. candidates who intend to pursue a research career in this field. Candidates for the A.M. degree only are not encouraged to apply for admission and are accepted only under exceptional conditions. Preference is given to students who have completed one year of graduate work in chemistry, physics, or biology at Duke University or at some other approved institution. As preparation for courses in advanced chemistry, the student must have completed college courses in analytical geometry and elementary calculus. He also must have had adequate preparation for the reading examination in French and German, which is required of candidates for the Ph.D. degree.

M241. GENERAL BIOCHEMISTRY AND NUTRITION.—Three lectures, four laboratory periods of three hours each, one two-hour seminar weekly for eighteen weeks. Prerequisites: general chemistry, organic chemistry, physical and analytical chemistry, and at least one year of college biology. Feb.-June. 8 s.h.; without laboratory work, 3 s.h.

PROFESSORS HANDLER AND TAYLOR; ASSOCIATE PROFESSORS
M. L. C. BERNHEIM, SCHWERT; ASSISTANT
PROFESSOR KAMIN; DR. BYRNE

M243-244. GENERAL BIOCHEMISTRY.—An introductory but intensive course in the broader aspects of biochemistry. Topics stressed include the chemistry of naturally occurring materials, nature of enzyme action, intermediary metabolism and chemical aspects of the specialized behavior of mammals, plants and micro-organisms. Prerequisites: organic chemistry and at least one year of college biology. 6 s.h.

PROFESSOR HANDLER; ASSOCIATE PROFESSOR
SCHWERT; ASSISTANT PROFESSOR
KAMIN; DR. BYRNE

M245. LABORATORY METHODS IN BIOCHEMISTRY.—A laboratory course emphasizing the procedures and instruments of biochemical research. Each technic is employed in the course of a classical experiment demonstrating an important biochemical finding. Prerequisite: Biochemistry M243-44 or their equivalent. 2 s.h.

PROFESSOR HANDLER; ASSOCIATE PROFESSOR SCHWERT;
ASSISTANT PROFESSOR KAMIN

M343-344. BIOCHEMISTRY OF PROTEINS AND ENZYMES.—A lecture and seminar course devoted to the chemical, physical and biological properties of proteins and enzymes. In the first semester, general aspects of protein chemistry will be considered; in the second semester specific proteins and enzyme systems will be reviewed. 4 s.h.

ASSOCIATE PROFESSOR SCHWERT

M345-346. SEMINAR.—Required of all graduate students majoring in biochemistry, one hour per week. 2 s.h.

PROFESSOR HANDLER; ASSOCIATE PROFESSOR SCHWERT;
ASSISTANT PROFESSOR KAMIN

M347-348. BIOCHEMICAL RESEARCH.—A laboratory course in which the students are introduced to specialized concepts and methods currently employed in biochemical research. This will be accomplished by rotating assignment of the students to the various special laboratories of the department. Prerequisite: Biochemistry M241 or its equivalent. 2, 3, or 4 s.h.

PROFESSOR HANDLER; ASSOCIATE PROFESSOR
SCHWERT; DR. BYRNE

M349-350. INTERMEDIARY METABOLISM.—A seminar course devoted to a study of the detailed mechanisms of carbohydrate, fat and protein metabolism. Given alternately with Biochemistry M351-352. Prerequisite: Biochemistry M241 or M243-44 or their equivalent. 4 s.h.
 PROFESSOR HANDLER

M351. NUTRITION.—A seminar course in which the chemical and physiological behavior of essential nutritional factors is considered, as well as the nature of deficiency states. Prerequisite: Biochemistry M241 or its equivalent. Given alternately with Biochemistry M349-350. 2 s.h.
 PROFESSOR HANDLER

M354. BIOCHEMISTRY OF DISEASE.—A lecture and seminar course in the biochemical aspects of the pathogenesis, diagnosis, and therapy of diseases of metabolism. 2 s.h.
 PROFESSOR HANDLER

MICROBIOLOGY

M221. BACTERIOLOGY AND IMMUNOLOGY.—This course is devoted primarily to the study of the biological and immunological relationships of microorganisms (bacteria, fungi, Rickettsia, and viruses) in disease. It is not a course in bacteriologic technique. An additional course in technical methods is provided for those who require it. Five lectures, two 1-hour conferences and three laboratory periods of 3 hours each weekly, in fall quarter. Prerequisites: courses in general zoology, general botany, histology and comparative anatomy, general and organic chemistry. 6 s.h.
 PROFESSORS D. T. SMITH, CONANT;
 ASSOCIATE PROFESSOR WILLETT

M223. ADVANCED BACTERIOLOGY AND IMMUNOLOGY.—This course is intended primarily for graduate students majoring in bacteriology, but it is also available as a minor to other graduate students in related fields, to whom it is recommended by respective supervising committees and with the approval of the Department of Bacteriology. Prerequisites: Bacteriology and Immunology, M221. 8 s.h.
 PROFESSOR D. T. SMITH

M234. RESEARCH SEMINAR ON VIRUSES.—Limited to advanced students. 2 s.h. per semester.
 PROFESSOR BEARD

M235. MEDICAL MYCOLOGY.—This course is intended to familiarize the graduate student majoring in mycology with the fungi causing disease in man and animals. The course includes practical laboratory work with materials from patients in Duke Hospital and those sent to the Duke Fungus Registry from outside sources. Prerequisites: A.M. in botany with major in mycology and M221. Course limited to four students each year. 8 s.h.
 PROFESSOR CONANT

HEMATOLOGY

M211. HEMATOLOGY.—Three lectures and three laboratory periods of 3 hours each, weekly, for eleven weeks in the spring quarter. Prerequisites: courses in general zoology, general botany, histology and comparative anatomy. 4 s.h.
 ASSOCIATE PROFESSOR RUNDLES

MEDICAL PARASITOLOGY

M291. MEDICAL PARASITOLOGY.—One lecture and one three-hour laboratory period per week for eleven weeks during the fall quarter. Prerequisites: courses in Zoology 204, general botany, histology and comparative anatomy. 1 s.h.
 PROFESSOR CONANT; ASSOCIATE PROFESSOR LARSH

PHYSIOLOGY AND PHARMACOLOGY

M261-262. HUMAN PHYSIOLOGY.—Six lectures and twenty laboratory hours per week. Prerequisites: Anatomy M201 and Biochemistry M241 (or equivalents) and at least one year of college physics. Feb.-June. Credits depending on work taken. (Maximum 8 s.h.)
 PROFESSOR HALL AND ALL MEMBERS
 OF THE GRADUATE STAFF

M365. RESPIRATION AND AERO-PHYSIOLOGY.—A study of the fundamental respiratory processes in living organisms, and of the special physiological responses and adjustments of the individual during high altitude flight. Lectures, conferences, laboratory. Prerequisites: M261-262 or equivalent. 4 s.h.
 PROFESSOR HALL

M369. PHARMACOLOGY. MODE OF ACTION OF DRUGS.—Studies and discussions of the pharmacological action of drugs in terms of biochemical and physiological processes. Lectures, conferences, and laboratory. Prerequisites: M261-262 or equivalent. 4 s.h.
PROFESSOR F. BERNHEIM

M370. SEMINAR.—A weekly meeting of graduate students and staff in which papers reviewing classical and current physiological literature are reported. Required of all graduate students who are candidates for the A.M. or Ph.D. degree. 2 s.h.
PROFESSORS HALL AND BERNHEIM; ASSOCIATE PROFESSOR PENROD; AND ASSISTANT PROFESSOR HULL

M372. RESEARCH.—Individual investigations in the various fields of physiology. Credits to be arranged.
PROFESSORS HALL AND BERNHEIM; ASSOCIATE PROFESSOR PENROD; AND ASSISTANT PROFESSOR HULL

ADVANCED DEGREES CONFERRED JUNE 4, 1956

MASTER OF ARTS

Roger A. Agile	Eugene Joseph Lynch
Reevis Stancil Alphin	Barbara L. Manley
Jean Elizabeth Bankert	Roy T. Matthews
Philip Davis Battle	Abie Forest Maxwell
Clarissa Lee Brady	Clyde Taft McCants
Durant York Brannock, Jr.	John G. Monteabara
Carl Franklin Cannon, Jr.	Takashi Ochi
Chang-boh Chee	Dunbar Hunt Ogden
Bernard Chern	Elizabeth Anne Peterson
Paul Washington Crutchfield, Jr.	Earl Waters Porter
Mary Elizabeth DeLoach	Mary Ann Raney
Jeremy P. Felt	Joon Hee Rho
Joel Clarence Ford, Jr.	Herman Auston Rierson
Leroy A. Glasner, Jr.	Ahmad Sam
George Edgar Goode	Patricia Butler Sanderford
William Drayton Goodrum	Stephen Sloane Singer
John Leo Hartman, Jr.	John R. Thompson
Harry Wild Hickey	Robert Guy Van Meter
Edwin Harrison Hilborn	Sidney Thomas Webster
Chester Fay Hwang	Evelyn Rivers Wilbanks
Julius Robert Johnson, Jr.	Helen Jean Foster Wilkinson
Fuller Parham Karriker	George Masters Woodwell
James Andrews Leith	George T. Youngblood

MASTER OF ARTS IN TEACHING

Ruth Joan Cupka	Laurel Valerie Grover
George Milton Davis	Leslie Marshall Hall, Jr.

MASTER OF EDUCATION

Violet Dillard Hunsucker

DOCTOR OF EDUCATION

WINFRED JACKSON HOUSE, A.B., A.M., Duke University.
Dissertation: "Legal Development of the Administrative Organization and Control of Public Education in North Carolina"

HARRY PENROSE IRWIN, JR., A.B., University of Delaware; M.Ed., Duke University.
Dissertation: "The Articulation of Auditing and Accounting Practices in the Public Schools of North Carolina"

DOCTOR OF PHILOSOPHY

CECIL WYLIE ALFORD, A.B., A.M., Texas Christian University.
Dissertation: "The Socially Maladjusted Child in School: A Sociological Study in Special Education"

RAY MORRIS ATCHISON, A.B., Howard College; A.M., Peabody College.
Dissertation: "Southern Literary Magazines—1865-1887"

JUNE NORTHPROP BARKER, B.S., University of Rochester; A.M., Duke University.
Dissertation: "A Study of the Respiratory Function of the Blood and the Hypoxia Tolerance of Normal, Infant and Altitude-Acclimatized Mammals"

BURTON FLOYD BEERS, A.B., Hobart College; A.M., Duke University.
Dissertation: "Robert Lansing and the Far East"

EUGENE MERLE BERNSTEIN, B.S., A.M., Duke University.
Dissertation: "Internal Conversion Electrons from Coulomb Excited Nuclei"

LAWRENCE CARROLL BLISS, B.S., A.M., Kent State University.
Dissertation: "A Comparison of Plant Development in Microenvironments of Arctic and Alpine Tundras"

- ROBERT CHARLES BLOCK, B.S. in E.E., Newark College of Engineering; A.M., Columbia University.
Dissertation: "Neutron Differential Cross Sections at 90° and 180°"
- THOMAS BLOSSOM, A.B., Amherst College; A.M., Columbia University.
Dissertation: "Antonio Narino, Precursor of Colombian Independence"
- WILLIAM K. BOARDMAN, III, B.S., University of South Carolina; A.M., Duke University.
Dissertation: "The Utilization of Object Structure in Prerecognition Responses"
- A. CARTER BROAD, A.B., A.M., University of North Carolina.
Dissertation: "Reproduction, Larval Development and Metamorphosis of Some Natantia from Beaufort, North Carolina"
- LOUIS EMERY BUMGARTNER, B.S. in Ed., A.M., Kent State University.
Dissertation: "Jose Cecilio Del Valle: Central-American Savant"
- RONALD F. BUNN, A.B., Southwestern at Memphis; A.M., Duke University.
Dissertation: "The Organization, Activities, and Ideology of the Federation of German Employers' Associations"
- MILDRED ANN CAMPBELL, B.S., George Washington University; A.M., Smith College.
Dissertation: "Asexual Reproduction and Larval Development in *Polydora Tetrabanchia* Hartman"
- WILLIAM J. CHAMBERS, B.S., University of Illinois.
Dissertation: "Certain Alkylations, Acylations and Cleavages of Carbonyl Compounds"
- C. DONALD CHRISTIAN, A.B., University of Kansas.
Dissertation: "Studies on the Neuro-Endocrine Control of Ovulation in the Rabbit"
- JOHN A. CHRISTIE, A.B., Oberlin College; A.M., Wesleyan University; A.M., Yale University.
Dissertation: "Thoreau, Traveler"
- JOHN COCKE, B.S. in M.E., Duke University.
Dissertation: "The Regular Point"
- BOYD LEE DANIELS, A.B., College of Wooster; B.D., McCormick Theological Seminary.
Dissertation: "The Greek Manuscript Tradition of the Protevangelium Jacobi"
- SIDNEY BRUNSON DENMAN, A.B., Mississippi College.
Dissertation: "The Conflict of Church and Sect Roles in the Southern Baptist Ministry"
- ALEXANDER JACK DESSLER, B.S., California Institute of Technology.
Dissertation: "The Amplitude Dependence of the Velocity of Second Sound"
- ROBERT HAMILTON DUFORT, A.B., Duke University.
Dissertation: "Associative and Motivational Factors in Eyelid Conditioning"
- MARION MAHAN DUNCAN, JR., B.S., M.S., Alabama Polytechnic Institute.
Dissertation: "An Investigation of the Brueckner Theory of Nuclear Saturation"
- CHARLES JOSEPH EBY, B.S., University of Michigan; A.M., Dartmouth College.
Dissertation: "Certain Acidic and Basic Catalyzed Condensations and Cyclizations"
- RAYMOND ARTHUR ESTHUS, A.B., Florida Southern College; A.M., Duke University.
Dissertation: "Diplomatic Relations between the United States and Japan"
- EDWARD L. FRIEDMAN, B.S., City College of New York.
Dissertation: "Level of Aspiration and Some Criteria of Adjustment in an Aged Population"
- RALPH WILLIAM GABLE, B.S. University of Texas; A.M., Duke University.
Dissertation: "Some Monovalent Cation Exchange Equilibria in Methanol Solutions"
- NELSON BURTON GRACE, A.B., M.S., University of Miami.
Dissertation: "A Developmental Comparison of Word Usage with Structural Aspects of Perception and Social Adjustment"
- JACK PHILIP GREENE, A.B., University of North Carolina; A.M., Indiana University.
Dissertation: "The Quest for Power of the Lower Houses of Assembly in the Southern Royal Colonies 1730-1763"
- MALCOLM DONALD GYNTHIER, A.B., A.M., Stanford University.
Dissertation: "A Study of the Variables Affecting Differential Eyelid Conditioning"
- Cecil ROSS HAMPSON, B.S., University of California.
Dissertation: "Immunological and Environmental Studies with *Coccidioides Immitis*"
- HARLEY M. HANSON, A.B., University of Akron.
Dissertation: "The Effects of Discrimination Training on Stimulus Generalization"
- MILAN E. HAPALA, A.B., Beloit College; A.M., University of Nebraska.
Dissertation: "The Evolution of Czechoslovak Political Parties and the Russian Question, 1918-1921"
- ROBERT LEIGH HARRIS, A.B., A.M., University of Alabama.
Dissertation: "The South in Defeat: 1865"
- IRVIN HART, A.B., Pomona College.
Dissertation: "Maternal Child-Rearing Practices and Authoritarian Ideology"
- DAVID BIXBY HAWK, A.B., Iowa State Teachers College; A.M., University of Chicago.
Dissertation: "General Education in the College Curriculum: A Study in Social Movements"
- JEAN ELLEN HAWKINS, A.B., Georgia State College for Women; A.M., Duke University.
Dissertation: "Transaminase Activity in Tubercle Bacilli"
- RICHARD COOPER HECKMAN, B.S., Antioch College; A.M., Duke University.
Dissertation: "Phosphorescence Studies of Some Heterocyclic and Related Organic Molecules"

- STANLEY HILLS, B.S., City College of New York; A.M., Duke University.
Dissertation: "Some Factors Contributing to Instability of the Manganese Dioxide Electrode"
- EINAR HINNOV, A.B., St. Olaf College; A.M., Duke University.
Dissertation: "A Study of Optical Cross-Sections of Various Elements Based on Line Intensity and Temperature Measurements in a Flame Source"
- DAVID S. HOFFENBERG, B.S., City College of New York; A.M., Duke University.
Dissertation: "Synthesis of Some Hindered Oximes. Reactions of Oximes and Nitriles with Boron Fluoride"
- ORA M. JONES, A.B., University of Georgia; A.M., Duke University.
Dissertation: "The Relationship between Visual and Auditory Discrimination and Anxiety Level"
- HAIG APRAHAM KHATCHADOURIAN, A.B., A.M., American University of Beirut.
Dissertation: "The Coherence Theory of Truth: A Critical Evaluation"
- LUCIANO L'ABATE, A.B., Tabor College; A.M., University of Wichita.
Dissertation: "Transfer and Manifest Anxiety in Paired-Associate Learning"
- JOSEPH P. LEAHY, B.S., University of Rochester; A.M., Duke University.
Dissertation: "The China Policy of Charles Evans Hughes"
- BRUCE OSCAR LINN, B.S., Duke University.
Dissertation: "Acylation of Sodio Ketones with Acid Chlorides to Form β Diketones Synthetic Applications"
- CLARENCE FREDERICK LUCK, JR., A.B., University of Buffalo.
Dissertation: "Paramagnetic Resonance in Certain Irradiated Organic Compounds"
- MORTEN JAY LUYAAS, A.B., Allegheny College; A.M., Duke University.
Dissertation: "Through Foreign Eyes the American Civil War in European Military Thought"
- JOHN ISAAC MCCOLLUM, JR., A.B., A.M., University of Miami.
Dissertation: "Dryden's Dramatic 'Adaptations' The Tragedies"
- WILLIAM MALLARD, JR., A.B., Randolph-Macon College; B.D., Duke University.
Dissertation: "An Historical Critique of John Wyclif's Role in the Preaching Tradition Explicated in Terms of His English Sermons and Their Expressed Attitudes Toward Biblical Interpretation and the Vernacular Scriptures"
- JOHN J. MALLEY, A.B., Oberlin College.
Dissertation: "Verbal Recall of Hostile and Neutral Thematic Contents by Schizophrenic and Normal Subjects"
- HARVEY MARSHAK, A.B., University of Buffalo; A.M., University of Connecticut.
Dissertation: "Neutron Resonances in Odd-Intermediate Nuclei"
- FRANK J. S. MATURO, JR., B.S., University of Kentucky; A.M., Duke University.
Dissertation: "A Study of the Bryozoa of Beaufort, North Carolina, with Special Reference to Seasonal Distribution"
- JOSEPHINE FISHEL MILBURN, A.B., University of North Carolina; A.M., Louisiana State University.
Dissertation: "The Fabian Society and the British Labour Party"
- RAYBURN SABATSKY MOORE, A.B., A.M., Vanderbilt University.
Dissertation: "Southern Writers and Northern Literary Magazines, 1865-1890"
- BURL L. NOGGLE, A.B., A.M., Duke University.
Dissertation: "Conservation in Politics: A Study of Teapot Dome"
- E. GIBBES PATTON, A.B., Yale University; A.M., University of North Carolina.
Dissertation: "The Development of White Pine Forest and Soil on Abandoned Farm Lands in the North Carolina Blue Ridge"
- JAMES CROSWELL PERKINS, B.S., Princeton University; B.D., S.T.M., Oberlin College.
Dissertation: "Some Aspects of the Religious Thought of John Locke"
- HOWARD FRANCIS LEONARD ROCK, B.S., University of Massachusetts.
Dissertation: "A Revisional Study of the Decurrent-Leaved Species of the Genus *Helenium* L. (Compositae)"
- WILLIAM R. ROCK, A.B., Gettysburg College; A.M. Duke University.
Dissertation: "The British Policy of Appeasement and Its Critics, 1938-1939"
- MATTIE RUSSELL, A.B., A.M., University of Mississippi.
Dissertation: "William Holland Thomas, White Chief of the North Carolina Cherokees"
- VINCENT N. SCHRODER, B.S. in Agr., University of Georgia.
Dissertation: "Effects of Some Environmental Factors on Physiological Processes in Tobacco"
- HOWARD WILLIAM SHIELDS, B.S., University of North Carolina; M.S., Pennsylvania State College.
Dissertation: "Paramagnetic Resonance of X-Irradiated Amino Acids, Fatty Acids, and Proteins"
- EIZABETH FAYE SINCLAIR, B.S., Southwestern at Memphis; A.M., Duke University.
Dissertation: "Synthesis of Some Organic Compounds of Possible Antimicrobial Activity"
- DONALD GEORGE SMITH, A.B., McGill University.
Dissertation: "Studies in Shakespeare's *Measure for Measure*"

ADVANCED DEGREES CONFERRED

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- LEROY WALTER SMITH, A.B., The American University; A.M., George Washington University.
Dissertation: "The Doctrine of the Passions as It Appears in the Works of Henry Fielding, Particularly in *Amelia*"
- YASUO TAKENAKA, B.S., M.S., Stanford University.
Dissertation: "Part I, A Spectrophotometric Determination of Trypsin and Chymotrypsin. Part II, Mechanism of Action of Lactic Dehydrogenase"
- ORVILLE W. TAYLOR, A.B., Ouachita College; A.M., University of Kentucky.
Dissertation: "Negro Slavery in Arkansas"
- MARY OLIVE THOMAS, A.B., Agnes Scott College; A.M., University of North Carolina.
Dissertation: "Plutarch in *Antony and Cleopatra*"
- JOHN A. TUMBLIN, JR., Wake Forest College; A.M., Duke University.
Dissertation: "The Southern Baptist Missionary: A Study in the Sociology of the Professions"
- SHIRLEY SIDNEY ULMER, A.B., Furman University; A.M., Duke University.
Dissertation: "The South Carolina Delegates to the Constitutional Convention of 1787: An Analytical Study"
- AREND VAN ROGGEN, Candidaatsexaman, Doctoraalexamen, University of Leiden.
Dissertation: "Electron Resonances in the Lower Millimeter Wavelength Range"
- DAN OTTO VIA, B.S., Davidson College; B.D., Southern Baptist Theological Seminary.
Dissertation: "The Doctrine of the Church in the Gospel of Matthew"
- ROBERT ADAIR WAGONER, B.S., Purdue University.
Dissertation: "Response Variability and Response Latency in Anxious Groups"
- GEOFFREY KING WALTERS, A.B., Rice Institute.
Dissertation: "Nuclear Resonance Experiments on He Below 1 K"
- ELMUS R. WICKER, A.B., A.M., Louisiana State University; B.Ph., Oxford University.
Dissertation: "The Colonial Development Corporation, 1948-1953"
- JAMES W. WIGGINS, B.S. in Ed., South Georgia Teachers College; A.M., Duke University.
Dissertation: "Atlanta's Position in the Southeast: An Ecological Analysis"
- JEANNE DOUCETTE WILBUR, B.S., Mundelein College; M.S., University of Chicago.
Dissertation: "The Effect of Some Fungal and Bacterial Infections on the Succinic Dehydrogenase Activity of Mouse and Guinea Pig Kidneys"
- THEODORE SYLVESTER WILKINSON, A.B., A.M., Lucknow University.
Dissertation: "The Impact of Euro-American Culture on India from 1948 Onward with Special Reference to Cultural Lag"
- MARILYN WILLIAMSON, A.B., Vassar College; A.M., University of Wisconsin.
Dissertation: "A Critical Study of Thomas Middleton's Early Comedies"
- THEODORE PAUL ZAHN, A.B., University of California; M.S., University of Oregon.
Dissertation: "Acquired and Symbolic Affective Value as Determinants of Size Estimation in Schizophrenic and Normal Subjects"
- FRED WILLIAM ZECHMAN, JR., B.S., Otterbein College; M.S., University of Maryland.
Dissertation: "The Effects of Graded Impedance to Tracheal Air Flow on the Pattern of Breathing and Alveolar Gas Composition of Man"

ADVANCED DEGREES CONFERRED SEPTEMBER 1, 1955

MASTER OF ARTS

Kazuo Chujo
Elizabeth T. Crain
Joyce G. Denning
Patricia E. Jones
Seta M. Luck
Leonard I. Nathanson

Rachel Lee Nunley
William O. Scott
Nancy W. Selby
Charles W. Shuster
John W. Stewart
Charles F. Wilson

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Frances M. Hauser
Louise B. Lee

Marion I. Schmale
Robert F. Wiggins

MASTER OF EDUCATION

Eleanor D. Avant
Emma F. Chirra

Robert W. Gaddis
Earl W. Sandefur

BULLETIN
OF
DUKE UNIVERSITY



Undergraduate Instruction

(Trinity College, the Woman's College, and the
College of Engineering)

ANNOUNCEMENTS FOR 1957-1958

VOLUME 29

March, 1957

NUMBER 5

Annual Bulletins

For GENERAL BULLETIN of Duke University, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF UNDERGRADUATE INSTRUCTION, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE COLLEGE OF ENGINEERING, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES, apply to *The Dean of the Graduate School*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF FORESTRY, apply to *The Dean of the School of Forestry*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF LAW, apply to *The Dean of the School of Law*, Duke University, Durham, N. C.

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For BULLETIN OF THE DIVINITY SCHOOL, apply to *The Dean of the Divinity School*, Duke University, Durham, N. C.

For BULLETIN OF THE SUMMER SESSION, apply to *The Director of the Summer Session*, Duke University, Durham, N. C.

Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

DUKE UNIVERSITY

TRINITY COLLEGE

THE WOMAN'S COLLEGE

THE COLLEGE OF ENGINEERING



ANNOUNCEMENTS FOR 1957-1958



The Chapel Tower

(from an etching by Louis Orr)

The Chapel Tower dominates the scene of West, or the University, Campus, and it symbolizes the spiritual heritage of the University. The predominantly Gothic architecture, traditionally restless and aspiring, contributes to the intellectually stimulating atmosphere of the University and provides an appropriate setting for educational endeavors.

BULLETIN
OF
DUKE UNIVERSITY



UNDERGRADUATE INSTRUCTION

TRINITY COLLEGE
THE WOMAN'S COLLEGE
THE COLLEGE OF ENGINEERING

1956-1957

ANNOUNCEMENTS FOR 1957-1958

DURHAM, NORTH CAROLINA

1957

"I request . . . that great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination, and application evincing a wholesome and real ambition for life."

—JAMES B. DUKE.

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Calendar of the Colleges

1957

- September 12. Thursday, 7:30 P.M. Assembly for all entering freshmen; Freshman Orientation begins.
- September 12. Thursday, 7:30 P.M. Assembly for transfer students entering Trinity College and the College of Engineering.
- September 16. Monday. Registration and matriculation of former students of Trinity College and the College of Engineering, who have not pre-registered.
- September 17. Tuesday. Registration and matriculation of new students with advanced standing. Woman's College.
- September 18. Wednesday. Final registration of pre-registered students.
- September 19. Thursday. Fall semester classes begin.
- October 22. Tuesday. Examination in English Usage.
- November 4. Monday. Last day for reporting mid-semester grades.
- November 27. Wednesday, 12:30 P.M. Thanksgiving recess begins.
- December 2. Monday, 8:00 A.M. Classes are resumed.
- December 11. Wednesday. Founders' Day.
- December 21. Saturday, 12:30 P.M. Christmas recess begins.

1958

- January 6. Monday, 8:00 A.M. Classes are resumed.
- January 11. Saturday, 12:30 P.M. Fall semester classes end.
- January 14. Tuesday. Final examinations begin.
- January 24. Friday. Final examinations end.
- January 28. Tuesday. Registration and matriculation of new students.
- January 29. Wednesday. Last day for matriculation for the spring semester.
- January 30. Thursday. Spring semester classes begin.
- March 12. Wednesday. Last day for reporting mid-semester grades.
- March 22. Saturday, 12:30 P.M. Spring recess begins.
- March 31. Monday, 8:00 A.M. Classes are resumed.
- May 16. Friday, 5:00 P.M. Spring semester classes end.
- May 19. Monday. Final examinations begin.
- May 29. Thursday. Final examinations end.
- May 31. Saturday. Commencement begins.
- June 1. Sunday. Commencement Sermon.
- June 2. Monday. Graduating Exercises.

The Undergraduate Colleges



DUKE UNIVERSITY is built about a group of colleges which have their roots deep in the past. It was founded more than one hundred years ago when a number of earnest citizens from Randolph and adjacent counties assembled in a log school house to organize an educational society. They wished to provide lasting support for the local academy founded a few months before by an energetic son of North Carolina, Brantley York.

Moved by "no small share of philanthropy and patriotism," these men set forth their belief "that ignorance and error are the bane not only of religious but also of civil society" and that they "rear up almost an impregnable wall between man and the happiness he so ardently pants after." On that basis they formally adopted a constitution for the Union Institute Society. Thus in February, 1839, the academy became Union Institute. Twelve years later the Institute was reorganized as Trinity College. In 1892 it was moved from the fields of Randolph County to the growing city of Durham. Thirty-two years later the College grew into Duke University. With increasing enrollment and the development of specialized needs the Woman's College was formed in 1925 and the College of Engineering in 1938.

From academy to university the basic principles have remained constant. The University motto, *Eruditio et Religio*, reflects a fundamental faith in the union of knowledge and religion, the advancement of learning, the defense of scholarship, the love of freedom and truth, a spirit of tolerance, and a rendering of the greatest service to the individual, the state, the nation, and the church. Through changing generations of students the objective has been to encourage each individual to achieve to the extent of his capacities an understanding and appreciation of the world in which he lives, his relationship to it, his opportunities, and his responsibilities.

Duke University is concerned with developing the whole man. In its classrooms, libraries, and laboratories it is concerned with his mental and moral development, in its gymnasiums and on its playing fields, with his physical growth, and in its Chapel and religious program, with his spiritual well being. Although it has always been closely associated with the Methodist Church, Duke welcomes students of all faiths and encourages them to develop their spiritual lives in accordance with the tenets of their own creeds. The need of training for specialized professions and employments is recognized, but such training is incidental to a larger purpose. Through the variety of the

subject matter, the insistence on a common core of fundamental courses, and an emphasis on a more intensive study of some selected subject, the colleges seek to give their students a knowledge and appreciation of the culture of the Western World and at the same time to provide a foundation for careers in business and the professions.

The three colleges exist as parts of a university community in which the student has full opportunity to take part. They have a unique role in this community as the centers of individual education for undergraduates, but as members of the University the colleges share in the extensive facilities of laboratory and field work, superior physical equipment, great libraries, and able faculties which only a major university can provide. They share the same campuses with the Graduate School of Arts and Sciences, the Law School, the Medical and Nursing Schools, the Divinity School, the School of Forestry, and the Duke Hospital. A wide range of activities, religious, intellectual, cultural, social, and athletic, is open to the entire University community. At the same time there are other activities and organizations designed specifically for members of each undergraduate college. The student may thus enjoy both the activities and the atmosphere of a small college and the broader facilities and challenges provided by the existence of a university community.

Although the three colleges have separate identities, they are closely inter-related. Students of Trinity College and the College of Engineering live in the same dormitories, belong to the same fraternities, hold membership in the same student government association, attend classes in the same buildings. The College of Engineering provides for the specialized interests of its students by offering training in technical fields. At the same time it recognizes the importance of the study of the humanities because it realizes that the engineer has definite responsibilities as a citizen and that these responsibilities cannot be properly stressed in the purely technical curricula. Engineering students, therefore, participate in the academic and extra-curricular life of the liberal arts college as well as in the training and campus activities peculiar to their own college.

As one of the colleges within the University system the Woman's College shares the advantages of the wider community, and yet it offers to its students the special opportunities and responsibilities which belong to a separate woman's college. Women students receive training in leadership by administering their own organizations and by participating in community projects. At the same time they have the stimulus which comes from co-educational classes and from the experience of working with men of other colleges in campus activities.

Whether in the classroom or on the campus the emphasis is on the individual. To this end, classes are kept small in size and close contact between professor and student is encouraged. Instructors, counsellors,

advisers, and administrative officers are interested in the student as a person. In turn the student is expected to accept the responsibility of contributing to his own development, to his college, and to his university. The relationship of mutual service between the individual student and his college is designed to develop men of intelligence, integrity, and culture. From this relationship there has grown through a century and more a sense of achievement and high competence that enables Duke men and women to make their place in the world as effective citizens whatever their careers may be.

Officers of the University for the Year 1956-57



The Corporation

THE EXECUTIVE COMMITTEE

The Executive Committee of the University consists of three members from the University Trustees, three from the Endowment Trustees, and the President of the University.

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AMOS RAGAN KEARNS	High Point, N. C.
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 Morehead City, N. C.
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Charlotte, N. C.
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Emeriti

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KARL BACHMAN PATTERSON, A.M. <i>Assistant Professor Emeritus of Mathematics</i>	1024 Monmouth Avenue
*ARTHUR SPERRY PEARSE, Ph.D., LL.D. <i>Professor Emeritus of Zoology</i>	803 Second Street
WILLIAM WALTER RANKIN, M.A. <i>Professor Emeritus of Mathematics</i>	Jefferson Hotel Richmond, Va.
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* Died, December 11, 1956.

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216 Forest Wood Drive

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* Resigned, August 31, 1956.

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Associate Professor of Psychology College Station
- *ROBERT HENRY BARNES (1953), M.D.
Assistant Professor of Psychiatry
- JAMES W. BARNHILL (1954), M.A., Major, U. S. Air Force
Assistant Professor of Air Science 2005 Arbor Street
- DAVID C. BARRY (1956), B.S., Lieutenant Commander, U. S. Navy
Assistant Professor of Naval Science Route 1, Box 107, Pope Road
- WILLIAM BARRY (1955), M.D.
*Associate Professor of Radiology and
 Chief of Radiology of Durham Veterans
 Administration Hospital* 1022 Gloria Avenue
- ROBERT V. R. BASSETT, JR. (1956), B.S., Captain, U. S. Navy
Professor of Naval Science 2101 Myrtle Drive
- LORENE BATES (1956), R.N., B.S.
Instructor in Nursing Hanes House
- GEORGE JAY BAYLIN (1939), M.D.
Professor of Radiology and Associate in Anatomy 2260 Cranford Road
- CHARLES A. BAYLIS (1952), Ph.D.
Professor of Philosophy 601 East Markham Avenue
- WILLIAM WALDO BEACH (1946), B.D., Ph.D.
Professor of Christian Ethics 100 Vineyard Street
- MRS. DOROTHY WATERS BEARD (1938), R.N.
Associate in Surgery Route 3, Hillsboro, N. C.
- JOSEPH WILLIS BEARD (1937), M.D.
*Professor of Surgery in Charge of Experimental
 Surgery; Associate Professor of Virology* Route 3, Hillsboro, N. C.
- ROLAND FREDERICK BECKER (1951), Ph.D.
Associate Professor of Anatomy 1010 Monmouth Avenue
- GORDON EDWARD BELL (1954), M.B.A., C.P.A.
Assistant Professor of Economics 2502 Glendale Avenue
- FREDERICK BERNHEIM (1930), Ph.D.
Professor of Pharmacology Woodridge Drive
- MRS. MARY LILIAS CHRISTIAN BERNHEIM (1930), Ph.D.
Associate Professor of Biochemistry Woodridge Drive
- †MRS. LYDIA BERNSTEIN (1953), B.M., M.S.
Visiting Instructor in Music
- EDWARD WILLARD BERRY (1936), Ph.D.
Professor of Geology 1003 North Gregson Street
- MRS. HELEN SMITH BEVINGTON (1943), M.A.
Assistant Professor of English Box 128, Route 2, Guess Road
- MERLE MOWBRAY BEVINGTON (1942), Ph.D.
Professor of English Box 128, Route 2, Guess Road
- LUCIUS AURELIUS BIGELOW (1929), Ph.D.
Professor of Chemistry 131 Pinecrest Road
- WILLIAM DWIGHT BILLINGS (1952), Ph.D.
Associate Professor of Botany 708 Louise Circle, Poplar Apartments
- ‡MARTIN LEE BLACK, JR. (1930), M.B.A., C.P.A.
Professor of Accounting 135 Pinecrest Road

* Resigned, November 15, 1956.

† Resigned, June 30, 1956.

‡ Absent on sabbatical leave, fall semester, 1956-57.

- WILLIAM MAXWELL BLACKBURN (1926), Ph.D.
Professor of English 402 Buchanan Boulevard
- ROBERT LINCOLN BLAKE (1949)
Associate in Medical Art and Illustration 609 Ruby Street
- JOHN B. BLANCHARD (1956), A.M.
Instructor in Romance Languages 2626 Pickett Road
- MARTIN M. BLOCK (1952), Ph.D.
Assistant Professor of Physics and Research Associate 2255 Cranford Road
- HUGO LEANDER BLOMQUIST (1920), Ph.D.
Professor of Botany 922 Demerius Street
- BYRON M. BLOOR (1952), M.D.
Associate in Neurosurgery 2216 Elba Street
- JAMES ROBERT BLY (1949), M.S.
Assistant Professor of Physical Education 2001 Ruffin Street
- * MORTON BOGDONOFF (1954), M.D.
Associate in Medicine
- † WILLIAM BRYAN BOLICH (1927), M.A., B.C.L.
Professor of Law 3724 Hope Valley Road, Hope Valley
- EDWARD CLAUDE BOLMEIER (1948), Ph.D.
Professor of Education 217 Faculty Apartments
- † ALLAN HADLEY BONE (1944), M.M.
Associate Professor of Music 2314 West Club Boulevard
- CAZLYN GREEN BOOKHOUT (1935), Ph.D.
Professor of Zoology 1307 Alabama Avenue
- MRS. ELIZABETH CIRCLE BOOKHOUT (1932-43; 1945), M.S.
Associate Professor of Physical Education 1307 Alabama Avenue
- ALEXANDER W. BOONE (1952), M.D.
Assistant Professor of Urology 2027 Woodrow Street
- LLOYD J. BORSTELMANN (1953), Ph.D.
Assistant Professor of Psychology 305 Francis Street
- MICHEL BOURGEOIS-GAVARDIN (1953), M.D.
Assistant Professor of Anesthesiology Box 3445, Duke Hospital
- † ELBERT VICTOR BOWDEN (1952-54; 1955), M.A.
Instructor in Economics
- ALVA M. BOWEN, JR. (1955), B.S., Lieutenant, U. S. Navy
Assistant Professor of Naval Science 1403 Norton Street
- FRANCIS EZRA BOWMAN (1945), Ph.D.
Associate Professor of English 2114 Woodrow Street
- BENJAMIN BOYCE (1950), Ph.D.
Professor of English 1200 Dwire Place
- DAVID GILBERT BRADLEY (1949), Ph.D.
Assistant Professor of Undergraduate Religion 707 Hudson Street
- HAROLD L. BRADLEY (1940), B.S.
Assistant Professor of Physical Education 1903 Washington Street
- CHARLES KILGO BRADSHAW (1939), Ph.D.
Professor of Chemistry 118 Pinecrest Road

* Resigned, June 30, 1956.

† Absent on sabbatical leave, spring semester, 1956-57.

‡ Resigned, August 31, 1956.

- JOHN SAEGER BRADWAY (1931), A.M., LL.B.
*Professor of Law and Director of the
 Legal Aid Clinic* 2621 Stuart Drive
- LOUIS RICHARD BRAGG (1955), Ph.D.
Instructor in Mathematics 1003 East Trinity Avenue
- RALPH J. D. BRAIBANTI (1953), Ph.D.
Associate Professor of Political Science 2614 Stuart Drive
- BERNARD BRESSLER (1954), M.D.
Associate Professor of Psychiatry 2700 Circle Drive
- ROBERT N. BRIGHAM (1956), B.E.E.
Lecturer in Electrical Engineering 2312 University Drive
- ROBERTA FLORENCE BRINKLEY (1947), Ph.D., LL.D.
Professor of English East Campus
- MRS. EDITH BROCKER (1955), B.S., M.Ed.
Assistant Professor of Nursing 16 Rogerson Drive, Chapel Hill, N. C.
- ROBERT MAURICE BRODERSON (1952), M.F.A.
*Instructor in Art Education and Studio and
 Instructor in the Department of Education* Cornwallis Road
- *ELMER L. BROOKS (1953), M.A., Ph.D.
Instructor in English
- FRANCES CAMPBELL BROWN (1931), Ph.D.
Professor of Chemistry 1205 Dwire Place
- IVAN WILLARD BROWN, JR. (1940-42; 1945), M.D.
Associate Professor of Surgery 1709 Vista Street
- †WADE GILLIES BROWN (1947), A.B.
Lecturer in Sanitary Engineering
- WILLIAM HUGH BROWNLEE (1948), Th.M., Ph.D.
Associate Professor of Old Testament 2809 Fairview Road
- PAUL ROBEY BRYAN, JR. (1951), M.M., Ph.D.
Assistant Professor of Music 1 Duke University Apartments
- ‡RALPH C. BRYANT (1956), Ph.D.
Visiting Lecturer in Forestry Avents Ferry Road, Route 4
 Raleigh, N. C.
- EDWIN CONSTANT BRYSON (1931), LL.B.
Professor of Law 818 Anderson Street
- §ROGER CONANT BUCK (1953), B.A., B. Phil. (Oxon.) Department of Philosophy
Assistant Professor of Philosophy Ohio State University, Columbus, Ohio
- MICHAEL J. BUCKINGHAM (1956), Ph.D.
Visiting Assistant Professor of Physics Route 2, Durham, N. C.
- LOUIS J. BUDD (1952), Ph.D.
Assistant Professor of English 1011½ Dacian Avenue
- ALBERT GEORGE BUEHLER (1955), B.A.
Instructor in Physical Education 3401 Cranford Road
- MRS. JE HARNED BUFKIN (1949), R.N., R.R.L.
Assistant Professor of Medical Record Library Science 2425 Perkins Road
- EVERETT I. BUGG, JR. (1953), M.D.
Associate in Orthopaedics 1544 Hermitage Court

* Resigned, August 31, 1956.

† Resigned, May 31, 1956.

‡ Fall semester, 1956-57.

§ Absent on leave, 1956-57.

- *FLORENT J. BUREAU (1955), Agrégé de l'Enseignement Supérieur
Research Associate in Mathematics
- EWALD W. BUSSE (1953), M.D.
Professor of Psychiatry 1423 Woodburn Road
- †GALE H. BUZZARD (1956), B.S. in M.E.
Instructor in Mechanical Engineering Department of Mechanical Engineering
- WILLIAM LAWRENCE BYRNE (1954), Ph.D.
Associate in Biochemistry Duke Hospital
- MRS. MARGUERITE WEISINGER BYRNES (1956), M.A.
Temporary Instructor in Mathematics 1511 Woodland Drive
- JASPER LAMAR CALLAWAY (1937), M.D.
Professor of Dermatology and Syphilology 828 Anderson Street
- DONALD AMOS CALLESON (1955), B.S. in M.E.
Instructor in Mechanical Engineering 803 Third Street
- EDMUND McCULLOUGH CAMERON (1926), A.B.
Director of Physical Education and Athletics 2818 Chelsea Circle, Hope Valley
- ‡MARY MILTON CAMPBELL (1953), R.N., B.S.N.E.
Instructor in Nursing Education
- EMILY BENTLEY CAMPBELL (1955), B.S.
Instructor in Nursing Arts 1707 James Street
- SULLIVAN G. CAMPBELL (1955), A.B., M.S., Ph.D.
Visiting Associate Professor of Mathematics 812 Third Street
- ROY M. CANFIELD, JR. (1955), B.F.A., Captain, U. S. Air Force
Instructor in Air Science 1914 Arbor Street
- JAMES CANNON (1919), A.M., Th.M., D.D., LL.D.
Ivey Professor of the History of Religion and Missions 2022 Myrtle Drive
- LEONARD CARLITZ (1932), Ph.D.
Professor of Mathematics 2303 Cranford Road
- JOHN WILLIAM CARLTON (1955), B.D., Ph.D.
Assistant Professor of Preaching 302 Northwood Circle
- DAVID WILLIAMS CARPENTER (1929), Ph.D.
Professor of Physics 137 Pinecrest Road
- JOHN WINDER CARR, JR. (1926), Ph.D.
Professor of Education 926 Monmouth Avenue
- EBER MALCOLM CARROLL (1923), Ph.D.
James B. Duke Professor of History K1C University Apartments
- R. CHARMAN CARROLL (1944), R.N., A.B., M.D.
Associate Professor of Psychiatry Highland Hospital, Asheville, N. C.
- BAYARD CARTER (1931), M.D.
Professor of Obstetrics and Gynecology 2111 Myrtle Drive
- ALLAN MURRAY CARTTER (1952), Ph.D.
Associate Professor of Economics and Research Associate 1208 Dwire Place
- WILLIAM H. CARTWRIGHT (1951), Ph.D.
Professor of Education 2114 Myrtle Drive
- HECTOR NERI CASTANEDA (1956), Ph.D.
Visiting Assistant Professor of Philosophy Apartment 2
 Fifth and Markham Avenue
- MRS. HELEN KENNARD CASTELLANO (1947), M.A.
Instructor in Romance Languages 2511 Perkins Road

* Resigned, August 15, 1956.

† Spring semester, 1956-57.

‡ Resigned, June 30, 1956.

- JUAN RODRÍGUEZ CASTELLANO (1947), Doctor en Filosofía y Letras
Professor of Romance Languages 2511 Perkins Road
- LEON EDWARD CHAIKEN (1952), B.S., M.F.
*Associate Professor of Forest Management and
Assistant Director of the Forest* 2737 Dogwood Road
- ANAND MOHAN CHAK (1956), Ph.D.
Research Instructor in Mathematics 410 Anderson Street
- MRS. ROMA SAWYER CHEEK (1947), Ph.D.
Assistant Professor of Political Science 210 Cottage Lane, Chapel Hill, N. C.
- AMOZ IMMANUEL CHERNOFF (1956), M.D.
Associate Professor of Medicine 86 Hayes Road, Chapel Hill, N. C.
- BENJAMIN GUY CHILDS (1924), M.A.
Professor of Education 1019 West Markham Avenue
- ELON HENRY CLARK (1934)
Professor of Medical Art and Illustration 1300 Oakland Avenue
- KENNETH WILLIS CLARK (1931), Ph.D.
Professor of New Testament 1308 West Markham Avenue
- LELIA ROSS CLARK (1949), R.N., M.A.
Professor of Nursing Service Apartment 6M, Poplar Apartments
- ROMANE LEWIS CLARK (1953), Ph.D.
Assistant Professor of Philosophy Apartment 10
Fifth and Markham Avenue
- JAMES T. CLELAND (1945), M.A., Th.D., D.D.
James B. Duke Professor of Preaching 2117 Myrtle Drive
- *PAUL HIBBERT CLYDE (1937), Ph.D.
Professor of History 1311 Carolina Avenue
- PAUL WHITLOCK COBB (1955), B.S.
Instructor in Physical Education 412 Swift Avenue
- LOUIS DAVID COHEN (1946), Ph.D.
*Associate Professor of Psychology and Associate
Professor of Medical Psychology* 1505 Acadia Street
- ROBERT TAYLOR COLE (1935), Ph.D.
James B. Duke Professor of Political Science 7 Sylvan Road
- JOEL G. COLTON (1947), Ph.D.
Assistant Professor of History 2801 Dogwood Road
- ROBERT MERLE COLVER (1953), Ed.D.
Assistant Professor of Education 900 Dacian Avenue
- NORMAN FRANCIS CONANT (1935), Ph.D.
*Professor of Mycology and Associate
Professor of Bacteriology* Route 1, Old Cornwallis Road
- ROBERT HOWE CONNERY (1949), Ph.D.
Professor of Political Science 1722 Duke University Road
- EVELYN VAIL COONRAD (1952-53; 1955), M.D.
Associate in Medicine Duke Hospital
- THOMAS HOWARD CORDLE (1950), Ph.D.
Assistant Professor of Romance Languages 2420 Perkins Road
- JOHN B. COUGHLIN (1956), M.D.
Associate in Anesthesiology 2119 West Club Boulevard
- MARTHA LEE COVINGTON (1954), B.S.N.
Instructor in Nursing Arts Apartment S2, 810 Demerius Street

* Absent on sabbatical leave, spring semester, 1956-57.

- ROBERT CALVIN COX (1942), M.A.
Assistant Professor of Physical Education 1826 Guess Road
- ROBERT LAWRENCE CRAIG (1938), M.D.
Associate in Psychiatry Highland Hospital, Asheville, N. C.
- ROBERT NOWELL CREADICK (1946), M.D.
Associate Professor of Obstetrics and Gynecology 1200 Anderson Street
- MASON CRUM (1930), Ph.D., Litt.D.
Professor of Biblical Literature 912 Anderson Street
- WILLIAM L. CULBERSON (1955), Ph.D.
Instructor in Botany 1001 Carolina Avenue
- *EDMUND G. CUMMINGS (1955), Ph.D.
Instructor in Zoology
- JOHN SHELTON CURTISS (1945), Ph.D.
Professor of History Route 2, Box 129, Guess Road
- ROBERT EARL CUSHMAN (1945), B.D., Ph.D.
Professor of Systematic Theology 130 Pinecrest Road
- BINGHAM DAI (1943), Ph.D.
Professor of Psychology, and Professor of Medical Psychology 2404 Perkins Road
- BOYD LEE DANIELS (1952), B.D., Ph.D.
Instructor in Undergraduate Religion 1840 Forest Road
- GIFFORD DAVIS (1930), Ph.D.
Professor of Romance Languages 2248 Cranford Road
- MRS. ATALA THAYER SCUDDER DAVISON (1942), M.D.
Associate in Pediatrics Duke Hospital
- WILBURT CORNELL DAVISON (1927), M.D., D.Sc., LL.D.
James B. Duke Professor of Pediatrics Duke Hospital
- ALEXANDER DeCONDE (1952), Ph.D.
Assistant Professor of History 1515 Woodburn Road
- JOHN ESSARY DEES (1939), M.D.
Professor of Urology 413 Carolina Circle
- MRS. SUSAN COONS DEES (1939), M.D.
Associate Professor of Pediatrics and Allergy 413 Carolina Circle
- WILLIAM DECATUR DEGRAVELLES, JR. (1956), M.D.
Visiting Assistant Professor of Rehabilitation Apartment E-23
 Westover Park Apartments
- WILLIAM P. DEISS, JR. (1954), M.D.
Assistant Professor of Medicine and Biochemistry and Director of Radioisotope Laboratory, Veterans Hospital Veterans Hospital
- WILLIAM J. A. DEMARIA (1951), M.D.
Assistant Professor of Pediatrics 1501 Woodburn Road
- *JEAN-JACQUES DEMOREST (1948), Ph.D.
Associate Professor of Romance Languages
- SARA JAMISON DENT (1955), M.D.
Associate in Anesthesiology Duke Hospital
- WILLIAM ERNEST DETURK (1949), M.D., Ph.D.
Associate Professor of Pharmacology 2513 Pickett Road
- †FRANK TRAVER DEVYVER (1935), Ph.D.
Professor of Economics 8 Sylvan Road

* Resigned, August 31, 1956.

† Absent on sabbatical leave, 1956-57.

- *DONALD J. DEWEY (1950), M.A.
Assistant Professor of Economics Department of Economics
- MACDONALD DICK (1932), M.D.
Assistant Professor of Physiology and Pharmacology
and Associate in Medicine 3005 Norwich Way, Hope Valley
- ROBERT L. DICKENS (1949), M.S., C.P.A.
Assistant Professor of Accounting 7 Duke University Apartments
- †RUSSELL LESLIE DICKS (1949), B.D., D.D., D.Litt.
Professor of Pastoral Care 2308 Prince Street
- HAROLD T. DODGE (1955), M.D.
Assistant Professor of Medicine 1403 Norton Street
- ROBERT H. DOVENMUEHLE (1956), M.D.
Associate in Psychiatry 3527 Hamstead Court
- MRS. MARIE-THERESE LINIERE DOW (1934), L. ès L., M.A.
Instructor in Romance Languages 2252 Cranford Road
- NEAL DOW (1934), Ph.D.
Associate Professor of Romance Languages 2252 Cranford Road
- ANTHONY CHARLES DRAGO (1953), B.S. in P.E.
Instructor in Physical Education 1305 Carroll Street
- FRANCIS GEORGE DRESSSEL (1929), Ph.D.
Professor of Mathematics 309 Francis Street
- †EUGENE DROZDOWSKI (1955), M.A.
Instructor in History
- KENNETH LINDSAY DUKE (1940), Ph.D.
Associate Professor of Anatomy 701 West Club Boulevard
- MARION MAHAN DUNCAN (1956), Ph.D.
Visiting Assistant Professor of Physics 811 Louise Circle
 Poplar Apartments
- ROBERT F. DURDEN (1952), Ph.D.
Assistant Professor of History 2812 Erwin Road, Poplar Apartments
- GEORGE SHARP EADIE (1930), Ph.D.
Professor of Physiology and Pharmacology 3433 Dover Road, Hope Valley
- WATT WEEMS EAGLE (1930), M.D.
Professor of Otolaryngology 804 Anderson Street
- MRS. ELEANOR BEAMER EASLEY (1934), M.D.
Associate in Obstetrics and Gynecology Guess Road
- HOWARD EASLEY (1930), Ph.D.
Associate Professor of Education Guess Road
- RUTH BUCHANAN EDDY (1952), M.S.
Assistant Professor of Physical Education 213 Faculty Apartments
- WILLIAM WHITFIELD ELLIOTT (1925), Ph.D.
Professor of Mathematics Box 4721, Duke Station
- §LEON HUBBARD ELLIS (1947), Ph.D.
Lecturer in Political Science 2428 Perkins Road
- ERNEST ELSEVIER (1950), M.S. in M.E.
Assistant Professor of Mechanical Engineering Route 1, Hillsboro, N. C.
- FRANK LIBMAN ENGEL (1947), M.D.
Associate Professor of Medicine and
Assistant Professor of Physiology 1302 Oakland Avenue

*Absent on sabbatical leave, 1956-57.

† Absent on sabbatical leave, fall semester, 1956-57.

‡ Resigned, August 31, 1956

§ Absent on sabbatical leave, spring semester, 1956-57.

- PAUL J. ENGLISH (1956), A.B., Captain, U. S. Air Force
Instructor in Air Science Frazier and Denise Street
- E. HARVEY ESTES (1953), M.D.
Associate in Medicine 3542 Hamstead Court
- JOHN WENDELL EVERETT (1932), Ph.D.
Professor of Anatomy 2605 University Drive
- ROBINSON OSCAR EVERETT (1956), LL.B.
Visiting Assistant Professor of Law 119 North Dillard Street
- LEONARD WILLIAM FABIAN (1954), M.D.
Assistant Professor of Anesthesiology 1818 Guess Road
- WILLIAM MARTIN FAIRBANK (1952), Ph.D.
Associate Professor of Physics 2016 Pershing Street
- CARMEN M. FALCONE (1946), M.A.
Assistant Professor of Physical Education D-1A University Apartments
- ANNA LEE FAUVER (1955), B.S.
Instructor in Operating Room Nursing 1011 Dacian Avenue
- JOHN MORTON FEIN (1950), Ph.D.
Associate Professor of Romance Languages 2742 Circle Drive
- ARTHUR BOWLES FERGUSON (1939), Ph.D.
Associate Professor of History Route 2, Guess Road
- GEORGE BURTON FERGUSON (1937), M.D.
Associate in Bronchoscopy 3938 Dover Road, Hope Valley
- BERNARD F. FETTER (1951), M.D.
Assistant Professor of Pathology 2411 Pickett Road
- * EDGAR BEAUREGARDE FISHER (1953), B.D.
Lecturer in Church Administration
- JOHN H. FISHER (1955), Ph.D.
Associate Professor of English 2836 Stuart Drive
- WESTON FLINT (1956), A.M.
Instructor in Romance Languages 1121 Anderson Street
- † WILEY DAVIS FORBUS (1930), M.D.
Professor of Pathology 3309 Devon Road, Hope Valley
- † JOEL CLARENCE FORD, JR. (1953), B.S., Captain, U. S. Navy
Professor of Naval Science
- ROSE JULIET FORGIONE (1956), R.N., B.S., M.A.
Instructor in Pediatric Nursing 1412 North Duke Street
- ANDREW DURWOOD FOSTER (1954), B.D.
Assistant Professor of the History and Philosophy of Religion Apartment 18, Alastair Court
- JOHN ALVIS FOWLER (1953), M.D.
Assistant Professor of Psychiatry 1409 Woodburn Road
- † RUSSELL A. FRASER (1952), Ph.D.
Assistant Professor of English
- CHARLES F. FRENZEL (1955), A.B.
Assistant Professor of Hospital Administration and Assistant Superintendent of Duke Hospital 1008 Knox Street

* Resigned, May 31, 1956.

† Absent on leave, August 15 through December 31, 1956.

‡ Resigned, August 31, 1956.

- NOBORU FUKUNAGA (1955), M.D.
Visiting Assistant Professor of Pathology Duke Hospital
- * CHARLES DARBY FULTON, JR. (1950), Sc.D.
Assistant Professor of Mechanical Engineering 1507 West Pettigrew Street
- WILLIAM J. FURBISH (1954), B.S., M.A.
Instructor in Geology Route 1, Hillsboro, N. C.
- THOMAS MUIR GALLIE, JR. (1954-55; 1956), Ph.D.
Assistant Professor of Mathematics 1820 Forest Road
- CLARENCE ELLSWORTH GARDNER, JR. (1939), M.D., D.Sc.
Professor of Surgery Route 1, Hillsboro, N. C.
- WILLIAM HENRY GARDNER, JR. (1953), B.S. in C.E., M. Eng.
Assistant Professor of Civil Engineering 2108 Cole Road
- † NORMAN GARMEZY (1950), Ph.D.
Associate Professor of Psychology 10212 Tyburn Terrace, Bethesda, Md.
- W. SCOTT GEHMAN, JR. (1954), Ph.D.
Assistant Professor of Education 1312 Shephard Street
- NICHOLAS G. GEORGAIDE (1951), D.D.S., M.D.
Assistant Professor of Plastic Surgery 2417 Bruton Road
- JOHN JAY GERGEN (1936), Ph.D.
Professor of Mathematics 2803 Nation Avenue
- ALLAN H. GILBERT (1920), Ph.D.
Professor of English 503 Compton Place
- GEORGE C. GLOCKLER (1952), Ph.D.
Visiting Lecturer in Chemistry 3910 Darby Road, Hope Valley
- JAMES S. GLOTFELTY (1955), M.D.
Assistant Professor of Hospital Administration Staff Quarters, Veterans Hospital
- IRVING J. GOFFMAN (1955), A.B.
Instructor in Economics 1011 Alabama Avenue
- CLARENCE GOHDES (1930), Ph.D.
Professor of English 2737 Circle Drive
- JOSEPH LEONARD GOLDNER (1950), M.D.
Associate Professor of Orthopaedics 602 East Forest Hills Boulevard
- MRS. HALINA ZUKOWSKI GOLDSMITH (1950), R.N., B.S., M.I.
Assistant Professor of Nursing 918 Monmouth Avenue
- JEWETT GOLDSMITH (1949), M.D.
Assistant Professor of Psychiatry 918 Monmouth Avenue
- MCCHESENEY GOODALL (1954), M.D., Ph.D.
Visiting Associate Professor of Physiology 152 Pinecrest Road
- GEORGE E. GOODE (1956), M.A.
Temporary Instructor in Mathematics 2824 Ervin Road
- WALTER GORDY (1946), Ph.D.
Professor of Physics 2521 Perkins Road
- RICHARD BABSON GRANT (1952), Ph.D.
Assistant Professor of Romance Languages 1013 Rosehill Avenue
- † IRVING EMERY GRAY (1930), Ph.D.
Professor of Zoology 124 Pinecrest Road

* Absent on leave, fall semester, 1956-57.

† Absent on leave, February 1, 1956, through August 31, 1957.

‡ Absent on sabbatical leave, full semester, 1956-57.

- *PAUL S. GREENLAW (1955), Ph.D.
Instructor in Political Science
- †EUGENE GREULING (1948), Ph.D.
Associate Professor of Physics 2414 Perkins Road
- KEITH SANFORD GRIMSON (1930-42; 1945), M.D.
Professor of Surgery 3313 Devon Road, Hope Valley
- PAUL MAGNUS GROSS (1919), Ph.D.
William Howell Pegram Professor of Chemistry 3816 Dover Road, Hope Valley
- DORIS C. GROSSKREUTZ (1956), M.D.
Assistant Professor of Anesthesiology 61 Oakwood Drive
Chapel Hill, N. C.
- JULIA REBECCA GROUT (1924), M.S.
Professor of Physical Education 804 Fourth Street
- NORMAN GUTTMAN (1951), Ph.D.
Assistant Professor of Psychology 1802 Sunset Avenue
- *WILLY HAEBERLI (1954), Ph.D.
Visiting Assistant Professor of Physics
- HOWARD N. HAINES (1943), B.S.
Assistant Professor of Civil Engineering 2732 Dogwood Road
- FRANK GREGORY HALL (1926-42; 1945), Ph.D.
Professor of Physiology and Pharmacology 122 Pinecrest Road
- HUGH MARSHALL HALL (1952), Ph.D.
Assistant Professor of Political Science 814 Watts Street
- LOUISE HALL (1931), S.B. Arch., Ph.D.
Associate Professor of Architecture Box 6636, College Station
- JOHN HAMILTON HALLOWELL (1942), Ph.D.
Professor of Political Science 2709 Augusta Drive
- EDWIN CROWELL HAMBLIN (1931), M.D.
*Associate Professor of Obstetrics and Gynecology
and Professor of Endocrinology* 810 Forest Hills Boulevard
- †WILLIAM BASKERVILLE HAMILTON (1936), Ph.D.
Professor of History 2256 Cranford Road
- PHILIP HANDLER (1939), Ph.D.
Professor of Biochemistry and Nutrition 2529 Perkins Road
- JOHN KENNEDY HANKS (1954), M.A.
Assistant Professor of Music 1400 North Duke Street
- FRANK ALLAN HANNA (1948), Ph.D.
Professor of Economics 2239 Cranford Road
- OSCAR CARL EDVARD HANSEN-PRÜSS (1930), M.D. 3303 Surrey Road, Hope Valley
Professor of Medicine in Charge of Clinical Microscopy
- EARL THOMAS HANSON (1946), Ph.D.
Assistant Professor of Political Science 613 Swift Avenue
- ARREN MAYNOR HARDEE (1956), A.M.
Instructor in Romance Languages 2707 Legion Avenue
- ELLWOOD SCOTT HARRAR (1936), Ph.D.
Professor of Wood Technology 2228 Cranford Road
- PAUL HARRAWOOD (1956), M.S. in C.E.
Instructor in Civil Engineering 105 West Woodridge Drive

* Resigned, August 31, 1956.

† Absent on leave, spring semester, 1956-57.

‡ Absent on sabbatical leave, spring semester, 1956-57.

- JEROME SYLVAN HARRIS (1936), M.D.
Professor of Pediatrics and
Associate Professor of Biochemistry 2907 Horton Road
- FRANCIS PARKS HARRISON (1947), Ph.D.
Associate Professor of Physical Education 2722 Circle Drive
- HORNELL NORRIS HART (1938), Ph.D.
Professor of Sociology 2535 Perkins Road
- JULIAN DERYL HART (1930), M.D.
Professor of Surgery Route 1, Duke University Road
- GEORGE CORBIN HARWELL (1935), Ph.D.
Associate Professor of English 2115 Wilson Street
- CHARLES ROY HAUSER (1929), Ph.D.
Professor of Chemistry 1020 Rosehill Avenue
- CAROLINE ELIZABETH HELMICK (1949), M.D.
Associate in Preventive Medicine and Public Health and
Director of Student Health, Woman's College East Campus
- JAMES PAISLEY HENDRIX (1938), M.D.
Associate Professor of Medicine and Therapeutics 144 Pinecrest Road
- SIMEON K. HENINGER (1955), B.Litt. (Oxon.) Ph.D.
Instructor in English 101 Faculty Apartments
- *STEPHEN DUNCAN HERON, JR. (1950), M.S.
Assistant Professor of Geology 1506 Echo Road
- DUNCAN CHARTERIS HETHERINGTON (1930), Ph.D., M.D.
Professor of Anatomy K-3B University Apartments
- ALBERT HEYMAN (1953), M.D.
Associate Professor of Medicine 910 Arrowhead Road
 Chapel Hill, N. C.
- JOHN BAMBER HICKAM (1947), M.D.
Associate Professor of Medicine 713 Anderson Street
- ARTHUR OWEN HICKSON (1929), Ph.D.
Associate Professor of Mathematics Box 27, West Durham Station
- DOUGLAS GREENWOOD HILL (1931), Ph.D.
Professor of Chemistry Box 275, Route 2, St. Mary's Road
- MARCUS EDWIN HOBBS (1935), Ph.D.
Professor of Chemistry 115 Pinecrest Road
- LESLIE BENJAMIN HOHMAN (1946), M.D.
Professor of Psychiatry 1520 Hermitage Court
- †IRVING BRINTON HOLLEY, JR. (1947), Ph.D.
Associate Professor of History 6 Duke University Apartments
 Fifth and Markham Avenue
- WILLIAM HOLLISTER (1955), M.D.
Associate in Surgery Moore County Hospital, Pinehurst, N. C.
- FREDERIC B. M. HOLLYDAY (1956), Ph.D.
Instructor in History Apartment 4
 718 Underwood Avenue
- FRANCES VIRGINIA LEE HOLTON (1947), M.A.
Assistant Professor of Physical Education 407 Erwin Apartments
- CALVIN BRYCE HOOVER (1925), Ph.D., Litt.D.
James B. Duke Professor of Economics 1702 Duke University Road
- EDWARD CHARLES HORN (1946), Ph.D.
Associate Professor of Zoology 2509 Cascadilla Street

* Absent on sabbatical leave, fall semester, 1956-57.

† Absent on sabbatical leave, 1956-57.

- DORIS AHLEE HOWELL (1955), M.D.
Assistant Professor of Pediatrics 2519 Pickett Road
- JOHN CHASE HOWELL (1954), M.A.
Instructor in Sociology 1006 Demerius Street
- WAYLAND ELROY HULL (1953), Ph.D.
Assistant Professor of Physiology 2708 Circle Drive
- HAROLD J. HUMM (1954), Ph.D.
Associate Professor of Botany 920 Monmouth Avenue
- DON DOUGAN HUMPHREY (1945), Ph.D.
Professor of Economics 2802 Legion Avenue
- MRS. WANDA SANBORN HUNTER (1947), Ph.D.
Associate Professor of Zoology 803 Second Street
- PATRICK HUNTLEY (1955), M.A.
Instructor in Economics 1719 James Street
- ALLAN S. HURLBURT (1956), Ph.D.
Professor of Education 112 Buchanan Boulevard
- *CHESTER FOY HWANG (1954), B.S. in M.E.
Instructor in Mechanical Engineering
- PETER ILKOW (1956), Ph.D.
Instructor in German 206 Watts Street
- †THELMA MARGUERITE INGLES (1949), R.N., M.A.
*Associate Professor of Nursing Education and
Director, Division of Nursing Education* 1412 North Duke Street
- †WILLIAM HENRY IRVING (1936), B.A. (Oxon.), Ph.D.
Professor of English 2707 Legion Avenue
- JOSEPH K. ISLEY (1955), M.D.
Associate in Radiology 2417 Highland Avenue
- §THOMAS K. IVES (1954), B.S., Lieutenant, U. S. Navy
Assistant Professor of Naval Science
- ANN MADELINE JACOBANSKY (1953), R.N., B.S.N.E., M.Ed.
Professor of Nursing Westover Park Apartments
- §MERLE E. JACOBS (1954), Ph.D.
Temporary Instructor in Zoology
- **NORMAN E. JARRARD (1956), M.A.
Instructor in English P. O. Box 526, Chapel Hill, N. C.
- MARIANNA DUNCAN JENKINS (1948), Ph.D.
Associate Professor of Art 619 Morehead Avenue
- HOWARD EIKENBERRY JENSEN (1931), Ph.D.
Professor of Sociology 143 Pinecrest Road
- FREDERICK CHARLES JOERG (1947), M.B.A.
Professor of Economics 2116 Pershing Street
- ††BETTY SUE JOHNSON (1955), B.S.N.E.
Instructor in Psychiatric Nursing
- TERRY WALTER JOHNSON, JR. (1954), Ph.D.
Assistant Professor of Botany 944 Lambeth Circle, Poplar Apartments

* Resigned, May 31, 1956.

† Absent on sabbatical leave, June 1, 1956 through May 31, 1957.

‡ Absent on sabbatical leave, 1956-57.

§ Resigned, August 31, 1956.

** Spring Semester, 1956-57.

†† Resigned, October 15, 1956.

- EDWARD ELLSWORTH JONES (1953), Ph.D.
Assistant Professor of Psychology 1705 Forest Road
- ARCHIBALD CURRIE JORDAN (1925), M.A.
Assistant Professor of English 147 Pinecrest Road
- BRADY RIMBEY JORDAN (1927), Ph.D.
Professor of Romance Languages 117 Pinecrest Road
- HELEN LOUISE KAISER (1943), R.P.T.T.
Assistant Professor of Physical Rehabilitation 804 Fourth Street
- WILLIAM ARTHUR KALE (1952), B.D., D.D.
Professor of Christian Education 500 East Markham Avenue
- HENRY KAMIN (1948), Ph.D.
Assistant Professor of Biochemistry 2417 Perkins Road
- WALTER KEMPNER (1934), M.D.
Professor of Medicine 1505 Virginia Avenue
- *CHRISTOPHER KENDRIS (1955), Ph.D.
Instructor in Romance Languages
- VAN LESLIE KENYON, JR. (1945), M.M.E.
Professor of Mechanical Engineering Route 2, Hillsboro, N. C.
- GRACE PARDRIDGE KERBY (1947), M.D.
Associate Professor of Medicine Box 3328, Duke Hospital
- GREGORY ADAMS KIMBLE (1952), Ph.D.
Associate Professor of Psychology 1815 Hillcrest Drive
- †JOHN H. KIRBY-SMITH (1955), Ph.D.
Visiting Professor of Zoology
- NORMAN KIRSCHNER (1956), Ph.D.
Associate in Biochemistry 614 North Gregson Street
- THEODORE G. KLEIN (1955), B.S., Lieutenant Commander, U. S. Navy
Assistant Professor of Naval Science 2011 Woodrow Street
- WILLIAM KLENZ (1947), M.A.
Assistant Professor of Music P.O. Box 856, Chapel Hill, N. C.
- *LOIS NINA KNOWLES (1953), R.N., B.S.N.
Instructor in Nursing Arts
- EDWARD M. KNOX, JR. (1955), B.S., Captain, U. S. Air Force
Instructor in Air Science 3411 Denise Street
- †RUTH M. KOCH (1953), M.S.
Assistant Professor of Nursing
- SIGMUND KOCH (1942-47; 1948), Ph.D.
Professor of Psychology Route 2, Durham, N. C.
- *JACOB FRANK KOENIG (1954), M.S. in E.E.
Assistant Professor of Electrical Engineering
- LUCY JULIETTE KOESY (1955), R.N., B.S.N.E.
Instructor in Nursing Arts 10 Bel Air Apartments
- §CLARENCE FERDINAND KORSTIAN (1930), Ph.D.
Professor of Silviculture 4 Sylvan Road

* Resigned, August 31, 1956.

† Spring semester, 1955-56.

‡ Resigned, September 17, 1956.

§ Absent on sabbatical leave, fall semester, 1956-57.

- BARNET KOTTLER (1953), Ph.D.
Instructor in English 521 East Club Boulevard
- PAUL JACKSON KRAMER (1931), Ph.D.
James B. Duke Professor of Botany 2251 Cranford Road
- ROBERT KRAMER (1947), LL.B.
Professor of Law 108 Pinecrest Road
- EDWARD KREADY KRAYBILL (1939), M.S.E.
Associate Professor of Electrical Engineering 2726 Circle Drive
- WILLIAM R. KRIGBAUM (1952), Ph.D.
Assistant Professor of Chemistry 2015 Woodland Drive
- GEORGE FREDERIC KUDER (1948), Ph.D.
Professor of Psychology 2516 Perkins Road
- EDWARD CHARLES KUNKLE (1948), M.D.
Professor of Neurology 2525 Perkins Road
- WESTON LABARRE (1946), Ph.D.
Associate Professor of Anthropology 1311 Alabama Avenue
- CREIGHTON LACY (1953), B.D., Ph.D.
Associate Professor of Missions and Social Ethics 2714 Dogwood Road
- GORDON C. LAHEY (1956), B.S. in E.E.
Visiting Instructor in Electrical Engineering 29A Brookwood Gardens
Burlington, N. C.
- CHARLES EARL LANDON (1926), Ph.D.
Professor of Economics 1514 Edgevale Road
- * WILLIAM GUERRANT LANE (1952), Ph.D.
Instructor in English
- THOMAS A. LANGFORD (1956), B.D.
Temporary Instructor in Undergraduate Religion 913 Lambeth Circle
Poplar Apartments
- JOHN TATE LANNING (1927), Ph.D.
Professor of History 3007 Surrey Road, Hope Valley
- JOHN E. LARSH, JR. (1943), Sc.D.
Associate Professor of Parasitology Memorial Hospital, Chapel Hill, N. C.
- ELVIN REMUS LATTY (1937), J.D., J.Sc.D.
Professor of Law 3620 Hathaway Road, Hope Valley
- RICHARD H. LEACH (1955), Ph.D.
Assistant Professor of Political Science 1419 Dollar Avenue
- † BENJAMIN FRANKLIN LEMERT (1930), Ph.D.
Associate Professor of Economics 123 Pinecrest Road
- HAROLD WALTER LEWIS (1949), Ph.D.
Associate Professor of Physics 2307 Sprunt Street
- MARTHA MODENA LEWIS (1933), M.A.
Associate Professor of Physical Education 407 Erwin Apartments
- RALPH ELTON LEWIS (1941), M.S. in M.E.
Assistant Professor of Mechanical Engineering 1401 Alabama Avenue
- CHARLES HARRIS LIVENGOD, JR. (1946), LL.B.
Professor of Law 2804 Chelsea Circle, Hope Valley
- DANIEL A. LIVINGSTONE (1956), Ph.D.
Assistant Professor of Zoology 1010 Minerva Avenue
- CHARLES E. LLEWELLYN, JR. (1955), M.D.
Assistant Professor of Psychiatry Hamstead Court

* Resigned, August 31, 1956.

† Absent on sabbatical leave, 1956-57.

- GEORGE TOWNSEND LODGE (1953), Ph.D.
Associate Professor of Psychology 804 Third Street
- ARTHUR HILL LONDON, JR. (1932), M.D.
Associate in Pediatrics 306 South Gregson Street
- ERNEST CROFT LONG (1956), M.D.
Assistant Professor of Physiology and Pharmacology Westover Park Apartments
- HANS LÖWENBACH (1940), M.D.
Professor of Psychiatry and Physiology Box 79, Route 3
- CHARLES LUCIEN BAKER LOWNDES (1934), S.J.D.
James B. Duke Professor of Law 2016 Club Boulevard
- WILLIAM S. LYNN, JR. (1954), M.D.
Associate in Medicine and in Biochemistry Duke Hospital
- ANGUS M. MCBRYDE (1931), M.D.
Associate Professor of Pediatrics 410 East Forest Hills Boulevard
- MRS. PAULINE WAYNE McCASKILL (1954), B.S.N.E.
Instructor in Medical Nursing E2D University Apartments
- * JOSEPH ADOLPHUS McCLAIN, JR. (1940), J.S.D., LL.D.
Professor of Law
- CHARLES O. McDONALD (1956), M.A.
Instructor in English 227 Dacian Avenue
- GELOLO McHUGH (1946), Ph.D.
Assistant Professor of Psychology Mt. Sinai Road
- HENRY McINTOSH (1955), M.D.
Associate in Medicine 1807 Hillcrest Drive
- JAMES THOMAS McKEEL (1956), B.E.E.
Instructor in Electrical Engineering Smith Apartments, Watts Street
- † LIONEL WILFRED MCKENZIE, JR. (1948), B.Litt. (Oxon.), M.A.
Associate Professor of Economics 1026 West Trinity Avenue
- JOHN ROBERT McLAREN (1956), M.D.
Associate in Radiology Duke Hospital
- JONATHAN COLLINS McLENDON (1952), Ph.D.
Associate Professor of Education 944 Lambeth Circle, Poplar Apartments
- ROBERT M. McLEOD (1955), Ph.D.
Instructor in Mathematics 208 Buchanan Boulevard
- LEWIS J. McNURLEN (1952), Ph.D.
Instructor in Sociology 2713 Circle Drive
- HENRY T. MCPHERSON (1955), M.D.
Associate in Medicine 875 Louise Circle, Poplar Apartments
- SAMUEL D. MCPHERSON, JR. (1949), M.D.
Associate in Ophthalmology 29 Oak Drive
- JOHN NELSON MACDUFF (1956), M.M.E.
Professor of Mechanical Engineering 2733 Dogwood Road
- DOUGLAS BLOUNT MAGGS (1930), J.D., S.J.D.
Professor of Law 3940 Dover Road, Hope Valley
- JOHN E. MAJESKY (1955), B.S., Lieutenant, U. S. Navy
Assistant Professor of Naval Science 2522 Hillandale Road
- JOHN McCLELLAN MAJOR (1953), Ph.D.
Instructor in English 1020 Urban Avenue

* Resigned, August 31, 1956.

† Absent on leave, spring semester, 1956-57.

- FRANK MALINASKY (1955), B.S., Commander, U. S. Navy
Associate Professor in Naval Science 412 Carolina Circle
- ALAN KREBS MANCHESTER (1929), Ph.D.
Professor of History 2016 Myrtle Drive
- CLYDE LEONARD MANSCHRECK (1954), B.D., Ph.D.
Assistant Professor of Undergraduate Religion 1022 Lakewood Avenue
- * PHILIP NICHOLAS SETON MANSERGH (1956), D.Phil. (Oxon.), Ph.D. (Cantab.)
Visiting Professor and Senior Research Associate in History Department of History
- GEORGE MARGOLIS (1947), M.D.
Professor of Pathology 3838 Rugby Road
- JOSEPH ELDRIDGE MARKEE (1943), Ph.D.
James B. Duke Professor of Anatomy 1015 Demerius Street
- SIDNEY DAVID MARKMAN (1947), Ph.D.
Associate Professor of Art History and Archaeology 919 Urban Avenue
- MRS. ELSIE W. MARTIN (1930), M.S.
Professor of Dietetics Box 3713, Duke Hospital
- † MRS. RUTH CAMPBELL MARTIN (1944), M.D.
Associate Professor of Anesthesiology and Assistant Anesthetist
- ‡ SAMUEL PRESTON MARTIN (1949), M.D.
Associate Professor of Medicine and Assistant Professor of Bacteriology
- FRANK J. S. MATURO (1955), Ph.D.
Temporary Instructor in Zoology D-10 Westover Park Apartments
- WILLIAM CARY MAXWELL (1930), Ph.D.
Associate Professor of German 142 Pinecrest Road
- OTTO MEIER, JR. (1934), M.S., E.E.
Associate Professor of Electrical Engineering 916 Monmouth Avenue
- ELIJAH EUGENE MENEFFEE, JR. (1940), M.D.
Associate Professor of Medicine 2205 Cranford Road
- M. VICTOR MICHALAK (1950), A.M.
Assistant Professor of English 854 Louise Circle, Poplar Apartments
- GUSTAVUS H. MILLER (1955), Ph.D.
Instructor in Romance Languages Cedar Terrace, R.F.D. 1
- MARGARET EMMA MILLER (1954), R.N., B.S.N.E.
Instructor in Surgical Nursing 2113 Englewood Avenue
- CAROL L. MITCHUM (1955), R.N., B.S.
Instructor in Obstetric Nursing 25 Rogerson Drive, Chapel Hill N. C.
- JOHN THEODORE MOHAT (1955), Ph.D.
Instructor in Mathematics 1913 Essex Road
- ROBERT JOHN MONTFORT (1940), B.A.
Assistant Professor of Physical Education 3300 Cole Mill Road
- WILLIAM EDGAR MORRIS (1955), M.A.
Instructor in English 88 Hamilton Road, Chapel Hill, N. C.
- ASHTON BYROM MORRISON (1955), Ph.D., M.D.
Associate in Pathology Duke Hospital
- CLARENCE L. MORRISON (1954), B.S., Major, U. S. Marine Corps
Assistant Professor of Naval Science 3415 Denise Street

* Spring semester, 1956-57.

† Resigned, May 31, 1956.

‡ Resigned, March 31, 1956.

- ELIZABETH MOSES (1954), R.N., B.S.N.E., M.Ed.
*Assistant Professor of Nursing and Assistant to
 the Dean, School of Nursing* Box 2126, Hanes House
- EARL GEORGE MUELLER (1945), B.M., M.A., M.F.A.
Associate Professor of Art 1108 Watts Street
- MRS. JULIA WILKINSON MUELLER (1939-41; 1946), M.A.
Associate Professor of Music 1108 Watts Street
- ROBERT J. MURPHY, JR. (1950), M.D.
Associate in Pediatrics Hillsboro, N. C.
- *ROBERT MUSGRAVE (1955), M.D.
Associate in Orthopedics
- HIRAM EARL MYERS (1926), S.T.M., D.D.
Professor of Biblical Literature 141 Pinecrest Road
- †JAMES B. MYERS (1952), A.B., Major, U. S. Air Force
Assistant Professor of Air Science
- GEORGE W. NACE (1951), Ph.D.
Assistant Professor of Zoology 2021 Pershing Street
- AUBREY WILLARD NAYLOR (1952), Ph.D.
Associate Professor of Botany 881 Louise Circle, Poplar Apartments
- HENRY M. NEBEL, JR. (1956), A.M.
Visiting Assistant Professor of Russian 907 Lambeth Circle
 Poplar Apartments
- GLENN ROBERT NEGLEY (1946), Ph.D.
Professor of Philosophy 1700 Shawnee Street
- ERNEST WILLIAM NELSON (1926), Ph.D.
Associate Professor of History 939 Lambeth Circle, Poplar Apartments
- BARBARA CAROL NEWBORG (1952), M.D.
Associate in Medicine 1503 Virginia Avenue
- HENRY WINSTON NEWSON (1948), Ph.D.
Professor of Physics 1111 North Gregson Street
- WILLIAM McNEAL NICHOLSON (1935), M.D.
*Professor of Medicine in Charge of Postgraduate
 Education and Disease of Metabolism* 824 Anderson Street
- WALTER MCKINLEY NIELSEN (1925), Ph.D.
James B. Duke Professor of Physics 139 Pinecrest Road
- †LOTHAR WOLFGANG NORDHEIM (1937), Ph.D., Sc.D.
Professor of Physics
- GUY LEARY ODOM (1943), M.D.
Professor of Neurosurgery 2812 Chelsea Circle, Hope Valley
- †HOWARD T. ODUM (1954), Ph.D.
Assistant Professor of Zoology
- SIDNEY OLANSKY (1956), M.D.
Associate Professor of Dermatology and Syphilology 1720 Vista Street
- HENRY JOHN OOSTING (1932), Ph.D.
Professor of Botany 2642 University Drive
- EDWARD STEWART ORGAIN (1934), M.D.
Professor of Medicine 3321 Devon Road, Hope Valley

* Resigned, June 30, 1956.

† Resigned, August 31, 1956.

- RODERICK B. ORMANDY (1953), M.A.
Assistant Professor of Medical Speech Pathology 2906 Erwin Road
- ROBERT TAPPAN OSBORN (1954), B.D., Ph.D.
Instructor in Undergraduate Religion 216 Monmouth Avenue
- JOHN R. OVERMAN (1955), M.D.
Associate Professor of Bacteriology Duke Hospital
- HARRY ASHTON OWEN, JR. (1951), B.E.E., M.S.E.
Assistant Professor of Electrical Engineering 1506 Woodburn Road
- *MRS. ANNA COOPER PAINTER (1954), R.N., B.S.N.E.
Instructor in Pediatric Nursing
- AUBREY EDWIN PALMER (1944), B.S. in E., C.E.
Associate Professor of Civil Engineering 2525 Highland Avenue
- HAROLD TALBOT PARKER (1939), Ph.D.
Associate Professor of History 923 Dacian Avenue
- JOSEPH B. PARKER, JR. (1953), M.D.
*Associate Professor of Psychiatry and
 Chief of Psychiatry at Veterans Hospital* 2921 Horton Road
- ROY PARKER (1954), M.D.
Assistant Professor of Obstetrics and Gynecology 111 Pinecrest Road
- OSCAR A. PARSONS (1954), Ph.D.
*Assistant Professor of Psychology and
 of Medical Psychology* 1702 Forest Road
- JOEL FRANCIS PASCHAL (1954), LL.B., Ph.D.
Associate Professor of Law Chapel Hill Road
- RANSOM RATHBONE PATRICK (1954), B.A., M.F.A.
Professor of Aesthetics and Art 116 Pinecrest Road
- ROBERT LEET PATTERSON (1945), B.D., Ph.D.
Professor of Philosophy Washington Duke Hotel
- LEWIS PATTON (1926), Ph.D.
Associate Professor of English 614 Swift Avenue
- WILLIAM BERNARD PEACH (1951), Ph.D.
Assistant Professor of Philosophy 920 Dacian Avenue
- TALMADGE LEE PEELE (1939), M.D.
*Associate Professor of Anatomy and
 Assistant Professor of Medicine* Duke Hospital
- CHARLES HENRY PEETE, JR. (1953), M.D.
Assistant Professor of Obstetrics and Gynecology 859 Louise Circle
 Poplar Apartments
- WILLIAM P. J. PEETE (1955), M.D.
*Assistant Professor of Surgery and Assistant to
 the Dean of the School of Medicine* Winton Road
- †EDWARD JOSEPH PELLICCIARO (1954), Ph.D.
Research Instructor in Mathematics
- KENNETH E. PENROD (1950), Ph.D.
*Associate Professor of Physiology and Pharmacology and
 Assistant to the Dean of the School of Medicine* 2745 Dogwood Road
- HAROLD SANFORD PERRY (1932), Ph.D.
Associate Professor of Botany 2302 Cranford Road
- SOLOMON PAUL PERRY (1953), M.D.
Assistant Professor of Radiology 3602 Rugby Road

* Resigned, June 30, 1956.

† Resigned, August 31, 1956.

- ELBERT LAPSLEY PERSONS (1930), M.D.
*Associate Professor of Medicine and Associate Professor
of Preventive Medicine and Public Health* 723 Anderson Street
- WALTER SCOTT PERSONS (1930), A.B.
Assistant Professor of Physical Education 612 Swift Avenue
- ERNST PESCHEL (1953), M.D.
Assistant Professor of Medicine 2306 Pershing Street
- JAMES EMMET PETERSON (1954), B.C.E., M.S.C.E.
Assistant Professor of Civil Engineering 1009 Cobb Street
- RAY C. PETRY (1937), Ph.D., LL.D.
Professor of Church History 128 Pinecrest Road
- OLAN LEE PETTY (1952), Ph.D.
Associate Professor of Education 2519 Shenandoah Avenue
- JOHN BERNARD PEIFFER, JR. (1949), M.D.
Assistant Professor of Medicine 1705 Maryland Avenue
- JAMES HENRY PHILLIPS (1946), Ph.D.
Associate Professor of Undergraduate Religion 2517 Perkins Road
- JANE PHILPOTT (1951), Ph.D.
Assistant Professor of Botany 804 Fourth Street
- HENRY FLOYD PICKETT (1935), A.B.
Associate in Medical Art and Illustration and Photographer 2506 Cornwallis Road
- KENNETH LEROY PICKRELL (1944), M.D.
Professor of Plastic Surgery 3 Sylvan Road
- *ROGER STANTON PINKHAM (1955), Ph.D.
Instructor in Mathematics
- JACQUES C. POIRIER (1955), Ph.D.
Assistant Professor of Chemistry 2502 State Street
- FRANCIS ROSS PORTER (1930), B.S.
*Superintendent of the Hospital and Professor
of Hospital Administration* Hillsboro, N. C.
- RAYMOND W. POSILETHWAIT (1955), M.D.
*Associate Professor of Surgery and Assistant
Chief of Surgery at Veterans Hospital* Veterans Hospital
- MARY ALVERTA POSTON (1930), A.M.
Associate in Bacteriology 512 Watts Street
- MARY POTEAT (1935), Ph.D.
Assistant Professor of English 103 Faculty Apartments
- BENJAMIN E. POWELL (1946), Ph.D. 3609 Hathaway Road, Hope Valley
Professor in the Faculty of Arts and Sciences
- †LANIER WARD PRATT (1940), M.A.
Instructor in Romance Languages
- ‡RICHARD LIONEL PREDMORE (1950), D.M.L.
Professor of Romance Languages 2413 Perkins Road
- JAMES LIGON PRICE, JR. (1952), Ph.D.
Associate Professor of Undergraduate Religion 2723 Circle Drive
- VIENNA MARGARET PRIOLETTI (1956), M.M.
Visiting Instructor in Music Box 7247, College Station

* Resigned, August 31, 1956.

† Died, June 4, 1956.

‡ Absent on sabbatical leave, 1956-57.

- *REECE TREGO PROSSER (1955), A.B.
Research Instructor in Mathematics
- ALBERT ELSWORTH PUGH (1953), M.D.
*Assistant Professor of Medicine and Chief,
Professional Service, Veterans Hospital* Staff Quarters, Veterans Hospital
- †JAMES MINETREE PYNE (1949), B.S.
*Assistant Professor of Hospital Administration
and Assistant Superintendent of the Hospital*
- VERGIL ERWIN QUEEN (1956), B.D.
Lecturer in Church Administration 2000 Cedar Street
- DAVID RABIN (1953), B.S. in M.E., LL.B., LL.M. (Pat.) 538 Audubon Drive
Instructor in Mechanical Engineering Greensboro, N. C.
- CHARLES WILLIAM RALSTON (1953), B.S., M.F., Ph.D.
Assistant Professor of Forest Soils 600 Gregson Street
- ROBERT STANLEY RANKIN (1927), Ph.D.
Professor of Political Science 1227 Vickers Avenue
- BENJAMIN ULYSSES RATCHFORD (1928), Ph.D.
Professor of Economics 133 Pincrest Road
- ISRAEL THOMAS REAMER (1931), Ph.G.
Associate in Pharmacy 2406 West Club Boulevard
- KENNETH JAMES REARDON (1947), A.M.
Associate Professor of English 2821 Winton Road
- FREDERICK JEROME REED (1935), M.E., M.S.
Professor of Mechanical Engineering 2203 Englewood Avenue
- ROBERT JAMES REEVES (1930), M.D.
Professor of Radiology 920 Anderson Street
- EDWIN KELSEY REGEN (1951), B.D., D.D.
Lecturer in Church Administration 1106 Watts Street
- *HUGO MANLEY REICHARD (1951), Ph.D.
Instructor in English
- MRS. WALLY REICHENBERG-HACKETT (1946), Ph.D.
Assistant Professor of Psychology College Station
- CHARLES L. RENNEL (1956), M.D.
Assistant Professor of Radiology 2010 Sprunt Street
- †THOMAS D. REYNOLDS (1953), Ph.D.
Assistant Professor of Education 2326 Glendale Avenue
- JOSEPH BANKS RHINE (1927), Ph.D.
Director of the Parapsychology Laboratory Route 3, Hillsboro, N. C.
- JOHN W. RHOADS (1956), M.D.
Associate Professor of Psychiatry 814 Forest Hills Boulevard
- McMURRY SMITH RICHEY (1954), B.D., Ph.D.
*Assistant Professor of the Philosophy of
Christian Education* 2725 Dogwood Road
- JOHN A. RITCHIE (1953), M.D.
Associate in Psychiatry 209 West Woodridge Drive
- §HENRY STOUTTE ROBERTS, JR. (1948), Ph.D.
Associate Professor of Zoology 3507 Duke Homestead Road

* Resigned, August 31, 1956.

† Resigned, April 30, 1956.

‡ Absent on leave, February 1, 1956, through January 31, 1957.

§ Absent on sabbatical leave, spring semester, 1956-57.

- JOHN HENDERSON ROBERTS (1931), Ph.D.
Professor of Mathematics 2813 Legion Avenue
- *PERCIVAL ROBERTSON (1956), Ph.B., Ph.D., LL.D.
Visiting Professor of Geology Faculty Apartments
- ELIOT H. RODNICK (1949), Ph.D.
*Professor of Psychology, and Director
of Clinical Training in Psychology* 2806 Legion Avenue
- E. STANFIELD ROGERS (1952), M.D.
Associate Professor of Pathology Duke Hospital
- ROBERT SAMUEL ROGERS (1937), Ph.D., F.A.A.R.
Professor of Latin 148 Pinecrest Road
- THEODORE ROPP (1938), Ph.D.
Associate Professor of History 302 Woodridge Drive
- JESSE LEE ROSE (1936), Ph.D.
Associate Professor of Latin and Greek 203 Maynard Avenue
- NORMAN F. ROSS (1937), D.D.S.
Associate in Dentistry 2811 Chelsea Circle, Hope Valley
- ROBERT SEAMAN ROWE (1956), D.Eng.
Professor of Civil Engineering 1107 Urban Avenue
- DONALD FRANCIS ROY (1950), Ph.D.
Assistant Professor of Sociology 604 North Gregson Street
- JOHN JESSE RUDIN, II (1945), Ph.D.
Associate Professor of Speech 1019 Rosehill Avenue
- †MABEL F. RUDISILL (1948), Ph.D.
Associate Professor of Education 1719 Roxboro Road
- JULIAN MEADE RUFFIN (1930), M.D.
Professor of Medicine 816 Anderson Street
- RALPH WAYNE RUNDLES (1945), Ph.D., M.D.
Associate Professor of Medicine 132 Pinecrest Road
- ‡REAMES HAWTHORNE SALES (1949), B.D., Ph.D.
Assistant Professor of Undergraduate Religion 2800 University Drive
- HERMAN SALINGER (1955), Ph.D.
Professor of German 3403 Windsor Way, Hope Valley
- §MURIEL I. SANDEEN (1950), Ph.D.
Assistant Professor of Zoology 415 West Laurel Avenue, Woodstock, Ill.
- AARON P. SANDERS (1956), M.A.
*Associate in Radiology and Director of
the Isotope Laboratory* 810 Demerius Street
- CHARLES RICHARD SANDERS (1937), Ph.D.
Professor of English 103 Pinecrest Road
- MRS. EUGENIA CURTIS SAVILLE (1947), M.A.
Assistant Professor of Music 1103 Anderson Street
- LLOYD BLACKSTONE SAVILLE (1946), Ph.D.
Associate Professor of Economics 1103 Anderson Street
- JOHN HENRY SAYLOR (1928), Ph.D.
Professor of Chemistry 2500 Perkins Road

* Fall semester, 1956-57.

† Absent on sabbatical leave, spring semester, 1956-57.

‡ Absent on sabbatical leave, fall semester, 1956-57.

§ Absent on sabbatical leave, 1956-57.

- *THOMAS ANTON SCHAFER (1950), B.D., Ph.D.
Assistant Professor of Historical Theology 1523 Woodburn Road
- CLARENCE HENRY SCHEITTLER (1946), Ph.D.
Associate Professor of Sociology 119 Pinecrest Road
- HERMAN MAX SCHIEBEL (1939), M.D.
Associate in Surgery 1020 Anderson Street
- KNUT SCHMIDT-NIELSEN (1952), Mag.Sc., Ph.D.
Professor of Zoology 2402 Chapel Hill Road
- FRANCIS XAVIER SCHUMACHER (1937), B.S.
Professor of Forestry 6 Sylvan Road
- †RUDOLPH MATHIAS SCHUSTER (1953), Ph.D.
Research Associate and Visiting Assistant Professor of Botany
- ESTHER LOUISE SCHWERMEN (1947), Ph.D.
Assistant Professor of English 909 Lambeth Circle, Poplar Apartments
- GEORGE WILLIAM SCHWERT, JR. (1946), Ph.D.
Associate Professor of Biochemistry 611 Hammond Street
- WILL CAMP SEALY (1946), M.D.
Professor of Thoracic Surgery 2232 Cranford Road
- †RUSSELL P. SEBOLD, III (1955), Ph.D.
Instructor in Romance Languages
- WALTER JAMES SEELEY (1925), E.E., M.S.
James B. Duke Professor of Electrical Engineering 1005 Urban Avenue
- JAMES HUSTEAD SEMANS (1953), M.D.
Associate Professor of Urology 1415 Bivins Street
- DAVID GORDON SHARP (1939), Ph.D.
Associate Professor of Biophysics in Experimental Surgery and Biophysicist to Duke Hospital 202 Francis Street
- LAMBERT ARMOUR SHEARS (1927), Ph.D.
Professor of German 917 Green Street
- MILDRED MARGUERITE SHERWOOD (1939), R.N.
Associate in Pediatric Nursing Hanes House
- JOHN HERMAN SHIELDS (1926), A.M.
Associate Professor of Accounting 1315 Vickers Avenue
- MELVIN G. SHIMM (1953), LL.B.
Associate Professor of Law 1702 Vista Street
- WILLIAM WARNER SHINGLETON (1947), M.D.
Assistant Professor of Surgery 1510 Carolina Avenue
- ‡JOSEPH ROBERT SHOENFIELD (1952), Ph.D.
Assistant Professor of Mathematics 2329 Elm Street, Youngstown, Ohio
- WADE H. SHUFORD (1954), M.D.
Associate Professor of Radiology 1203 Gregson Street
- HERBERT O. SIEKER (1955), M.D.
Assistant Professor of Medicine 8 V.A. Staff Apartments, Erwin Road
- GEORGE ADDISON SILVER, III (1946), M.D.
Assistant Professor of Psychiatry 3910 Dover Road
- ALBERT J. SILVERMAN (1953), M.D.
Assistant Professor of Psychiatry

* Absent on sabbatical leave, 1956-57.

† Resigned, August 31, 1956.

‡ Absent on leave, 1956-57.

- EDWARD CHRISTIAN SIMMONS (1947), Ph.D.
Professor of Economics 2510 Perkins Road
- WILLIAM HAYS SIMPSON (1930), Ph.D.
Associate Professor of Political Science 1406 Dollar Avenue
- ALBERT G. SMITH (1951), M.D.
Assistant Professor of Pathology 826 Louise Circle, Poplar Apartments
- MRS. CYNTHIA JANE ALLEN SMITH (1955), B.A.
Instructor in Physical Education 1204 West Markham Avenue
- DAVID TILLERSON SMITH (1930), M.D., Litt.D.
*James B. Duke Professor of Bacteriology and
Associate Professor of Medicine* 3437 Dover Road, Hope Valley
- GROVER C. SMITH, JR. (1952), Ph.D.
Assistant Professor in English 1109 North Gregson Street
- HILRIE SHELTON SMITH (1931), Ph.D., D.D., Litt.D.
James B. Duke Professor of American Religious Thought 2721 Dogwood Road
- JOHN B. K. SMITH (1953), M.B., Ch.B., M.D.
Associate in Psychiatry Highland Hospital, Asheville, N. C.
- *ROBERT SIDNEY SMITH (1932), Ph.D.
Professor of Economics 2236 Cranford Road
- DOROTHY SPANGLER (1954), B.S., M.A.
Instructor in Physical Education 201 Faculty Apartments
- CHRISTOPHER SPENCER (1955), Ph.D.
Instructor in English 13 Duke University Apartments
- JOSEPH JOHN SPENGLER (1934), Ph.D.
James B. Duke Professor of Economics 2240 Cranford Road
- CHARLES D. SPIELBERGER (1955), Ph.D.
*Associate in Medical Psychology and
Assistant Professor of Psychology* 1710 Forest Road
- HERTHA D. E. SPONER (1935), Ph.D.
Professor of Physics 3309 Avon Road, Hope Valley
- FAYE EURLINE SPRING (1956), R.N., B.A.
Assistant Professor of Psychiatric Nursing 1412 North Duke Street
- DALE FISHER STANSBURY (1946), J.S.D.
Professor of Law 1008 West Trinity Avenue
- EUGENE ANSON STEAD, JR. (1947), M.D.
Florence McAlister Professor of Medicine 2122 Myrtle Drive
- CHARLES RONALD STEPHEN (1950), M.D.C.M., D.A., R.C.P.&S.
Professor of Anesthesiology and Chief Anesthetist 1608 University Drive
- HARRY R. STEVENS (1947), Ph.D.
Assistant Professor of History Box 5484, Duke Station
- LIONEL STEVENSON (1955), B.Litt. (Oxon.), Ph.D., F.R.S.L.
James B. Duke Professor of English 3106 Devon Road
- WILLIAM JAMES MCKELVIE STEWART (1956), B.A., B. in Comm.
Visiting Assistant Professor of Economics 2413 Perkins Road
- MRS. VERA K. STICHT (1955), B.S.
Instructor in Medical-Surgical Nursing 2117 Englewood Avenue
- WILLIAM FRANKLIN STINESPRING (1936), Ph.D.
Professor of Old Testament 1107 Watts Street
- FREDERICK WILLIAM STOCKER (1943), M.D.
Associate Professor of Ophthalmology 1124 West Forest Hills Boulevard

* Absent on sabbatical leave, spring semester, 1956-57.

- *CARL HENRY STOLTENBERG (1951), Ph.D.
Assistant Professor of Forest Economics
- †MRS. HAZEL DUVAL STONE (1956), A.B.
Temporary Instructor in Mathematics 2501 West Club Boulevard
- *PAUL CLINTON STOTTLEMEYER (1953), B.S. in C.E., M.S. in Hydraulic Engineering
Assistant Professor of Civil Engineering
- HOWARD AUSTIN STROBEL (1948), Ph.D.
Assistant Professor of Chemistry 1510 Woodburn Road
- PASCHAL NIELSEN STRONG, JR. (1956), Ph.D.
Lecturer in Psychology Veterans Hospital
- WIPPERT ARNOT STUMPF (1948), Ph.D.
Associate Professor of Education 127 Pinecrest Road
- CHARLES WOODROW STYRON (1946), M.D.
Associate in Medicine 920 Williamston Drive, Raleigh, N. C.
- ROBERT BURKE SUITT (1940), M.D.
Assistant Professor of Psychiatry 215 Faculty Apartments
- ELIZABETH READ SUNDERLAND (1939-42; 1943), Ph.D.
Associate Professor of Art Box 6416, College Station
- LOUIS EARL SWANSON (1949), A.B.
*Assistant Professor of Hospital Administration
 and Assistant Supervisor of the Hospital* 2610 Shenandoah Avenue
- †GEORGE HERBERT SWIFT (1954), Ph.D.
Instructor in Mathematics
- MEHMET TURHAN TANER (1956), M.S. in C.E.
Instructor in Civil Engineering 2822 Erwin Road, Poplar Apartments
- WOLFGANG TARABA (1956), Ph.D.
Assistant Professor of German B-3A University Apartments
- HAYWOOD MAURICE TAYLOR (1930), Ph.D.
Associate Professor of Biochemistry and Professor of Toxicology 2620 University Drive
- WILLIAM A. TERRILL (1956), Ph.D., C.P.A.
Visiting Associate Professor of Economics 85 Hamilton
 Chapel Hill, N. C.
- KENNETH JOHN THARP (1953), B.S. in C.E.
Assistant Professor of Civil Engineering 2610 Acadia Street
- §BRINLEY THOMAS (1956), Ph.D.
*James B. Duke Visiting Professor and
 Senior Research Associate in Economics* Department of Economics
- JOSEPH MILLER THOMAS (1930), Ph.D.
Professor of Mathematics 2215 Cranford Road
- WALTER LEE THOMAS, JR. (1932-35; 1937-42; 1945), M.D.
Professor of Obstetrics and Gynecology 3615 Dover Road, Hope Valley
- EDGAR TRISTRAM THOMPSON (1935), Ph.D.
Professor of Sociology 138 Pinecrest Road
- ALFRED TISCHENDORF (1955), Ph.D.
Instructor in History 1017 Gloria Avenue
- RAYMOND P. TODD (1955), B.S.E.E., Colonel, U. S. Air Force
Professor of Air Science and Tactics 409 Edwards Street
- **ELIAS TORRE (1951), M.A.
Assistant Professor of Romance Languages 1121 Anderson Street

* Resigned, August 31, 1956.

† Fall semester, 1956-57.

‡ Resigned, May 31, 1956.

§ Spring semester, 1956-57.

** Absent on sabbatical leave, 1956-57.

- PHILIP H. TRICKEY (1956), M.S. in E.E.
Lecturer in Electrical Engineering 112 West Lavender Street
- JAMES NARDIN TRUESDALE (1930), Ph.D.
Associate Professor of Greek 105 Pinecrest Road
- *WILLIAM B. TUCKER (1954), M.D.
Professor of Medicine and Chief of Tuberculosis Service, Veterans Hospital
- ARLIN TURNER (1953), Ph.D.
Professor of English 1514 Woodburn Road
- MRS. VIOLET HORNER TURNER (1943), M.D.
Assistant Professor of Obstetrics and Gynecology 2106 Cole Road
- RICHARD LOVEJOY TUTHILL (1953), Ed.D.
Professor in the Faculty of Arts and Sciences 2709 Dogwood Road
- MALCOLM P. TYOR (1955), M.D.
Associate in Medicine 922 Green Street
- LUELLA JANE UHRHANE (1947), R.N., M.P.H.
Assistant Professor of Health Education 208 Faculty Apartments
- CHARLES ROWE VAIL (1939), M.S. in E.E., Ph.D.
Associate Professor of Electrical Engineering 2730 Circle Drive
- RICHARD W. VAN FOSSEN (1956), A.M.
Instructor in English 619 Swift Avenue
- F. JOHN VERNBERG (1951), Ph.D.
Assistant Professor of Zoology 854 Louise Circle, Poplar Apartments
- *DAN OTTO VIA (1955), B.D., Ph.D.
Instructor in Undergraduate Religion
- PATRICK R. VINCENT (1954), Ph.D.
Assistant Professor of Romance Languages 1601 Bivins Street
- MRS. CHRISTA VON ROEBEL (1954), M.D.
Associate in Obstetrics and Gynecology 2303 Pershing Street
- WARREN CHASE VOSBURGH (1928), Ph.D.
Professor of Chemistry 2319 Englewood Avenue
- ALBERT EDWARD WACKERMAN (1938), M.F.
Professor of Forest Utilization 3610 Dover Road, Hope Valley
- HALLAM WALKER (1955), Ph.D.
Instructor in Romance Languages 105½ Hardee Street
- ARLEY JOHN WALTON (1948), B.S.L., D.D.
Professor of Church Administration and Director of Field Work 803 Second Street
- †LORING BAKER WALTON (1929), Lic. ès L., Ph.D.
Professor of Romance Languages 2235 Cranford Road
- CALVIN LUCIAN WARD (1952), Ph.D.
Assistant Professor of Zoology 801 Third Street
- †CHARLES EUGENE WARD (1927), Ph.D.
Professor of English 2429 Perkins Road
- SITH L. WARNER (1955), Ph.D.
Research Instructor in Mathematics 920 Dacian Avenue

* Resigned, August 31, 1956.

† Absent on sabbatical leave, spring semester, 1956-57.

- JAMES VAUGHN WARREN (1942), M.D.
*Professor of Medicine and Associate
 Professor of Physiology* 1406 Woodburn Road
- *ALBERT D. WARSHAUER (1955), M.D.
*Assistant Professor of Anesthesiology and
 Chief of Anesthesiology of Durham Veterans
 Administration Hospital*
- JAMES M. WATKINS (1954), A.M.
Instructor in Romance Languages 704 Shepherd Street
- GEORGE ARCHIBALD WATSON, JR. (1950), M.D.
Associate in Pediatrics 306 South Gregson Street
- RICHARD LYNESS WATSON, JR. (1939), Ph.D.
Associate Professor of History 109 Pinecrest Road
- VERNON ELGIN WAY (1930), A.M., M.A.
Associate Professor of Greek 918 Urban Avenue
- †HENRY WEITZ (1950), Ed.D.
Associate Professor of Education 2716 Circle Drive
- PAUL WELSH (1948), Ph.D.
Assistant Professor of Philosophy 102 Faculty Apartments
- JOSEPH CABLE WETHERBY (1947), M.A.
Assistant Professor of English 2306 Prince Street
- MRS. MARIE ANNE UPDIKE WHITE (1930), A.M.
Associate Professor of English 107 Pinecrest Road
- ARTHUR WHITEHILL (1956), Ph.D.
Visiting Associate Professor of Economics Coker Drive
 Chapel Hill, N. C.
- EDWARD S. WHITESIDES (1956), M.D.
Associate in Orthopedics 1701 Maryland Avenue
- MRS. EUGENIA REMLIN WHITRIDGE (1947), Ph.D.
Assistant Professor of Sociology Cornwallis Road
- GEORGE A. WICKES (1954), Ph.D.
Instructor in English 1012 Shepherd Street
- RUTH JANET WIEN (1949), M.S.
Assistant Professor of Social Service 1412 North Duke Street
- KARL MILTON WILBUR (1946), Ph.D.
Professor of Zoology 2404 Bruton Road
- LESLIE CLIFFORD WILBUR (1949), M.S.
Assistant Professor of Mechanical Engineering Route 3, Hillsboro, N. C.
- PELHAM WILDER, JR. (1949), Ph.D.
Assistant Professor of Chemistry 2525 Glendale Avenue
- MRS. HILDA POPE WILLETT (1948), Ph.D. 1953 Clark Avenue, Cameron Village
Associate Professor of Bacteriology Raleigh, North Carolina
- JAMES WESLEY WILLIAMS (1937), A.B., B.S. in C.E., M.S.
Professor of Civil Engineering 206 Swift Avenue
- †WALLACE LEON WILLIAMS (1955), B.E.E.
Instructor in Electrical Engineering
- ROBERT MARSHALL WILLIAMSON (1951), Ph.D.
Assistant Professor of Physics 20 Meadowbrook Drive
- * Resigned, April 15, 1956.
 † Absent on sabbatical leave, fall semester, 1956-57.
 ‡ Resigned, May 31, 1956.

FREDERICK ELIPHAZ WILSON (1923), A.M. <i>Associate Professor of German</i>	1020 Demerius Street
KELLOGG VAN WILSON (1955), Ph.D. <i>Assistant Professor of Psychology</i>	1813 Hillcrest Drive
ROBERT RENBERT WILSON (1925), Ph.D., LL.D. <i>Professor of Political Science</i>	717 Anderson Street
RUBY WILSON (1955), B.S. <i>Instructor in Nursing Arts</i>	1420 Broad Street
WILLIAM PRESTON WILSON (1950-54; 1955), M.D. <i>Associate Professor of Psychiatry</i>	2604 Hillandale Road
*THOMAS G. WINNER (1948), Ph.D. <i>Assistant Professor of Russian Language and Literature</i>	58 Rue Monge Paris 5 ^e , France
LOREN RALPH WITHERS (1949), M.S. <i>Assistant Professor of Music</i>	2741 Dogwood Road
BARNES WOODHALL (1937-43; 1945), M.D. <i>Professor of Neurosurgery</i>	4006 Dover Road, Hope Valley
ROBERT HILLIARD WOODY (1929), Ph.D. <i>Professor of History</i>	2648 University Drive
ALMA LORRAINE WOODYARD (1954), M.A. <i>Instructor in Physical Education</i>	201 Faculty Apartments
MRS. JULIA ANN HEDGEPEETH WRAY (1955), M.F.A. <i>Instructor in Physical Education</i>	Apartment E-1, 802 Green Street
DEWITT WRIGHT (1943), J.D. <i>Associate in Hospital Administration and Assistant Superintendent of the Hospital</i>	Route 3, Hillsboro, N. C.
JAMES B. WYNGAARDEN (1956), M.D. <i>Associate Professor of Medicine</i>	1004 Demerius Street
CHARLES R. YOUNG (1954), Ph.D. <i>Instructor in History</i>	Route 1, Box 22
DAVID BRUCE YOUNG (1956), B.S. in E.E. <i>Instructor in Electrical Engineering</i>	801 Third Street
GLENN YOUNG (1954), M.D. <i>Associate in Surgery</i>	2222 Elba Street
PAUL YOUNG (1956), M.A. <i>Professor in the Faculty of Arts and Sciences and Lecturer in Church Music</i>	1110 Shepherd Street
†THEODORE C. ZAHN (1955), Ph.D. <i>Visiting Assistant Professor of Psychology</i>	2708 Legion Avenue
KARL EDWARD ZENER (1928), Ph.D. <i>Professor of Psychology</i>	Route 2, Sparger Road

PART-TIME INSTRUCTORS

NORMAN HOWARD BARLOW (1955), A.B. <i>Romance Languages</i>	822 Louise Circle, Poplar Apartments
EUGENE M. BERNSTEIN (1956), Ph.D. <i>Physics</i>	Westover Park Apartments
ELAINE SYLVIA BERSON (1956), M.S.W. <i>Sociology</i>	806 Third Street
LAWRENCE AVERY BLACKWELL (1956), A.B. <i>Physics</i>	1035 Men's Graduate Center

* Absent on sabbatical leave, 1956-57.

† June 1, 1956, to May 1, 1957.

- JAMES BOATWRIGHT, III (1956), A.M.
English 1017½ Gloria Avenue
- *FREDERICK WILLIAM BORNIHAUSER (1956), A.M. (Oxon.)
English 1017½ Gloria Avenue
- JESSE H. BROWN (1956), B.D.
Undergraduate Religion 311 West Trinity Avenue
- MRS. ANNE MARIE BRYAN (1953), Baccalauréat, Lic. en Droit
Romance Languages 1003 South Duke Street
- DEWEY K. CARPENTER (1956), Ph.D.
Chemistry and Research Associate 820 Demerius Street
- ROBERT EUGENE CLUTE (1956), A.M.
Political Science 858 Louise Circle, Poplar Apartments
- EDWARD KEITH DIX (1956), A.B.
Economics 1912 House Avenue
- CHARLES A. DUKES, JR. (1956), A.B.
Economics 707 Louise Circle, Poplar Apartments
- JACK E. FERNANDEZ (1956), Ph.D.
Chemistry and Research Associate 603-A Maplewood Avenue
- GERALD R. GIBBONS (1956), LL.B.
Economics 819 Second Street
- MRS. JANET ISABEL COON GILLETTE (1956), A.B.
Romance Languages 509 North Street, Chapel Hill, N. C.
- FRED MONROE GOTTHEIL (1956), A.B.
Economics Men's Graduate Center
- ROBERT DORSET GRAVES (1956) A.M.
English 1005 Buchanan Boulevard
- HENRY ALLEN HARGREAVES (1956), A.M.
English 1101 North Duke Street
- *MRS. DOROTHY E. HARTH (1955), A.M.
Romance Languages 846 Louise Circle, Poplar Apartments
- †ALGERNON SIDNEY JOYNER (1956), B.S.
Mathematics Franklinton, N. C.
- *HOWARD E. KAPLAN (1956), M.A.T.
Romance Languages Men's Graduate Center
- ELIZABETH NORFLEET KING (1956), A.M.
Zoology 219 Epworth Inn
- MRS. JUANITA KREPS (1955), Ph.D.
Economics Morgan Creek Road, Chapel Hill, N. C.
- SAMUEL DUNCAN McMILLAN, JR. (1956), A.B.
Physical Education, Trinity College 705 Shepherd Street
- †WILLIAM LEROY MESSMER (1956), B.S.
Mathematics 2007 University Drive
- †FRANK NANIA (1956), M.Ed.
Education 6 Aycock Apartments
- JAMES PARTHEMOS (1955), A.M.
Economics 1112 Alabama Avenue
- WILLIAM CONRAD PINSCHMIDT, JR. (1956), M.S.
Zoology Men's Graduate Center

* Fall semester, 1956-57.

† Spring semester, 1956-57.

‡ February 1 through May 31, 1957.

- LOUIS D. QUIN (1956), Ph.D.
Chemistry and Research Associate 814 Louise Circle, Poplar Apartments
- WALTER PASCHAL REEVES, JR. (1956), M.S., Th.M.
English 2626 Pickett Road
- PHILIP BRUCE SECOR (1956), A.B.
Political Science 326 Clark Street
- JAMES N. SETTLE (1956), A.B.
Latin 205 Wilson Court, Chapel Hill, N. C.
- WILLIAM ROWLEY SHAWVER (1956), B.S. in M.E.
Mechanical Engineering and Mathematics 1324 Vickers Avenue
- WILLIAM KENNETH STARS (1953), M.A.
Aesthetics, Art and Music 1916 Glendale Avenue
- LAWRENCE ROBERT STIRES, JR. (1956), A.B.
Romance Languages 1801 Lakewood Avenue
- ROBERT WORTH TAYLOR (1954), B.S. in M.E.
Mechanical Engineering 1205 Sixth Street
- ROBERT LEON THURSTONE (1953), M.S. in E.E.
Electrical Engineering 400 Laurel Hill Road, Chapel Hill, N. C.
- BRUCE W. VON ZELLEN (1956), M.S.
Zoology 1001 Lamond Avenue
- HARRY WILSON WELLS (1956), A.M.
Zoology 212 Men's Graduate Center
- ROBERT MILTON WILL (1956), A.M.
Economics Men's Graduate Center

Educational Administration

- PAUL MAGNUS GROSS, Ph.D.
*Vice-President in the Division of Education and
 Dean of the University* 3816 Dover Road, Hope Valley
- RICHARD LOVEJOY TUTHILL, Ed.D.
University Registrar 2709 Dogwood Road
- ROBERTA FLORENCE BRINKLEY, Ph.D., LL.D.
Dean of the Woman's College East Campus
- ALAN KREBS MANCHESTER, Ph.D.
*Dean of Trinity College and Assistant to the
 Vice-President in the Division of Education* 2016 Myrtle Drive
- WALTER JAMES SEELEY, E.E., M.S.
Dean of the College of Engineering 1005 Urban Avenue
- *WILLIAM COUNCILL ARCHIE, Ph.D.
Associate Dean of Trinity College
- †SUSAN A. CLAY, M.A.
Acting Associate Dean of Academic Instruction, Woman's College
- ROBERT B. COX, A.M.
Dean of Undergraduate Men 2319 Club Boulevard
- EILEEN HARRIS HUCKABEE, A.M.
Dean of Undergraduate Instruction, Woman's College 1507 West Pettigrew Street
- MARIANNA DUNCAN JENKINS, Ph.D.
Associate Dean of Undergraduate Instruction, Woman's College 619 Morehead Avenue

* Resigned, August 31, 1956.

† Resigned, July 31, 1956.

- CHARLES BUCHANAN JOHNSON, Ed.D.
Assistant Dean of Trinity College 1005 South Duke Street
- BARNEY LEE JONES, B.D.
Assistant Dean of Trinity College Pickett Road
- LEWIS J. McNURLEN, Ph.D.
Assistant Dean of Trinity College 2713 Circle Drive
- *LANIER WARD PRATT, M.A.
Assistant Dean of Trinity College
- HOWARD AUSTIN STROBEL, Ph.D.
Assistant Dean of Trinity College 1510 Woodburn Road
- MARY GRACE WILSON, A.M.
Dean of Undergraduate Women Faculty Apartments
- MRS. FRANCIS M. WHITAKER, M.A.
Assistant Dean of Undergraduate Women 212 Faculty Apartments
- WILLIAM LAMBRETH BRINKLEY, JR., A.B., M.P.S.
Assistant Registrar 2740 Dogwood Road
- MRS. ELIZABETH ANDERSON PERSONS, A.M.
Director of Admissions, Woman's College 612 Swift Avenue
- EVERETT BROADUS WEATHERSPOON, A.B.
Director of Admissions, Trinity College and the College of Engineering 125 Pinecrest Road
- †BARBARA EVANS, A.B.
Field Secretary, Undergraduate Admissions
- PATRICIA KATHERINE MCBRIDE, A.B.
Field Secretary, Undergraduate Admissions E3D University Apartments
- PAUL CORWIN PARKER, A.B.
Field Secretary, Undergraduate Admissions Randolph Road
- †CHARLES BUCK ROBERTS, A.M.
Field Secretary, Undergraduate Admissions
- §BROOKS MILTON WAGGONER, B.D., Ph.D.
Field Secretary, Undergraduate Admissions
- MARGARET L. COLEMAN, A.M.
Central Records Supervisor 918 Urban Avenue
- MRS. DOROTHY HOLT McELDUFF, A.B.
Recorder, College of Engineering 100 Forest Wood Road
- LOUISE SEABOLT, A.M.
Recorder 204 Faculty Apartments
- **HENRY WEITZ, Ed.D.
Director of the Bureau of Testing and Guidance 2716 Circle Drive
- ROBERT MERLE COLVER, Ed.D.
Assistant Director, Bureau of Testing and Guidance 900 Dacian Avenue
- W. SCOTT GEHMAN, JR., Ph.D.
Senior Counselor, Bureau of Testing and Guidance 1312 Shepherd Street
- ††J. ALBERT SOUTHERN, M.A.
Psychometrist, Bureau of Testing and Guidance

* Died, June 4, 1956.

† Resigned, June 21, 1956.

‡ Resigned, June 30, 1956.

§ Resigned, May 31, 1956.

** Absent on sabbatical leave, fall semester, 1956-57.

†† Resigned, July 31, 1956.

MARCUS EDWIN HOBBS, Ph.D. <i>Dean of the Graduate School of Arts and Sciences</i>	115 Pinecrest Road
EARL THOMAS HANSON, Ph.D. <i>Director of Admissions, Graduate School of Arts and Sciences</i>	613 Swift Avenue
JAMES CANNON, A.M., Th.M., D.D., LL.D. <i>Dean of the Divinity School</i>	2022 Myrtle Drive
* CLARENCE FERDINAND KORSTIAN, Ph.D. <i>Dean of the School of Forestry</i>	4 Sylvan Road
† JOSEPH A. McCLAIN, JR., J.S.D., LL.D. <i>Dean of the School of Law</i>	
DALE FISHER STANSBURY, J.S.D. <i>Acting Dean of the School of Law</i>	1008 West Trinity Avenue
WILBURT CORNELL DAVISON, D.Sc., M.D., LL.D. <i>Dean of the School of Medicine</i>	Duke Hospital
ANN MADELINE JACOBANSKY, R.N., B.S.N.E., M.Ed. <i>Dean of the School of Nursing</i>	Westover Park Apartments
JAMES T. CLELAND, M.A., Th.D., D.D. <i>Dean of the Chapel</i>	2117 Myrtle Drive
PAUL HIBBERT CLYDE, Ph.D. <i>Director of the Summer Session</i>	1311 Carolina Avenue
OLAN L. PETTY, Ph.D. <i>Assistant Director of the Summer Session</i>	2519 Shenandoah Avenue
CAZYLN GREEN BOOKHOUT, Ph.D. <i>Director of the Duke Marine Laboratory</i>	1307 Alabama Avenue
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* Absent on sabbatical leave, fall semester, 1956-57.

† Resigned, August 31, 1956.

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* Resigned, August 31, 1956.

† Resigned, September 30, 1956.

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* Resigned, June 30, 1956.

† Absent on sabbatical leave, fall semester, 1956-57.

‡ Absent on sabbatical leave, 1956-57.

§ Resigned, September 1, 1956.

** Resigned, July 1, 1956.

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* Resigned, August 31, 1956.

† Absent on sabbatical leave, spring semester, 1956-57.

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* Resigned, March 15, 1956.

† Resigned, June 30, 1956.

‡ Resigned, November 26, 1955.

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The Woman's College Auditorium

(from an etching by Louis Orr)

The Woman's College Auditorium, which encloses the north end of East, or the Woman's College, Campus, typifies the serene Georgian architecture amid which women students of the University live and work. The Woman's College campus is complete within itself, offering to its students the combined advantages of a small and intimate college which shares in the invigorating atmosphere of a larger and more cosmopolitan University.

Admission to the Colleges



CANDIDATES may qualify for admission as members of the freshman class or as students with advanced standing. Since the enrollment is limited, the Committee on Admissions selects students who, in its judgment, are best qualified to benefit from the educational advantages which the colleges offer. The Committee bases its decision on the academic record of the candidate, on test scores, and on satisfactory evidence of good character and general fitness for college life at Duke. A visit to the campus for a personal interview with an officer of the University is of material benefit to the candidate and the Committee.

ADMISSION TO THE FRESHMAN CLASS: A candidate for admission to the freshman class must present at least fifteen acceptable units of secondary school credit.

For admission to Trinity College and the Woman's College twelve of the fifteen units must be in English, foreign language, history* and social studies, mathematics, and science. They must include three units in English, one unit in algebra, and one unit in plane geometry. The three remaining units are elective and may be selected from those subjects for which the school allows credit toward graduation; but it is recommended that they also be selected from the five subject fields listed above.

For admission to the College of Engineering seven of the fifteen units must be in English (3 units), chemistry or physics (1 unit), algebra (2 units), and plane geometry (1 unit). The remaining eight units are elective. At least five of them must be in English, foreign language, history and social studies, mathematics, and science. It is recommended that these five units be chosen from the following list:

English (in addition to the required 3 units).....	1 unit
Algebra (in addition to the required 2 units)	1/2 to 1 1/2 units
Trigonometry	1/2 unit
Solid Geometry	1/2 unit
Biology or chemistry or physics (in addition to the required unit)..	1 to 3 units
Foreign language	1 to 4 units
†History and social studies.....	1 to 4 units

The three additional units needed to make the total of fifteen may be selected from those subjects for which the school allows credit

* Candidates who do not present two acceptable units of history must take history in college.

† Engineering candidates who do not present at least one acceptable unit of history must take history in college.

toward graduation; but it is recommended that they also be chosen from the above list.

A graduate of an accredited secondary school who submits fifteen acceptable units of credit, who is recommended by his school principal, and who in all other respects meets the requirements of the Committee on Admissions may be admitted without examination. A candidate whose graduation is from a non-accredited school or about whom there may arise any other question as to qualification for admission may be required to take entrance examinations or such other tests as the Committee on Admissions may prescribe.

It is recommended that all candidates for admission to the freshman class take the Scholastic Aptitude Test of the College Entrance Examination Board or a similar program of tests administered on the Duke campus by the Duke University Bureau of Testing and Guidance. Details of the procedure to be followed in applying for either of these testing programs will be sent to each candidate for admission.

ADMISSION TO ADVANCED STANDING: A candidate for admission to advanced standing must have fulfilled the equivalent of the requirements for admission to the freshman class, must present official transcripts of all work completed in other institutions, and must have an honorable dismissal from each institution previously attended. Advanced standing candidates who have previously taken the Scholastic Aptitude Test of the College Entrance Examination Board should request the Board to send a report of their test scores to the Director of Admissions. All others are advised to take the Scholastic Aptitude Test or the program of tests administered by the Duke University Bureau of Testing and Guidance, as recommended for freshman candidates.

Credit for work completed at other institutions will be determined in relation to the curriculum requirements of the college in which the student enrolls at Duke.

A student who transfers with advanced standing to Trinity College or the Woman's College from a junior college must continue, for at least one semester in Trinity College or in the Woman's College, the foreign language he or she presents for minimum graduation requirements. Credit for courses in science offered for advanced standing in any of the undergraduate colleges by a transfer from a junior college will be determined by the departments concerned.

Transfer credits are tentatively evaluated pending the completion of two semesters of work in residence. To validate provisional credits the student must earn at least an average of C in a normal load of work. Transfer credit, in which grades of C or above have been earned, is rated at two quality points per semester hour when validated.

Courses in which grades of less than C have been earned are not acceptable for transfer credit.

The maximum amount of credit acceptable from a junior college is 60 semester hours, exclusive of physical education. No credit is given for work completed by correspondence, and credit for no more than six semester hours is allowed for extension courses. Any extension work accepted must be specifically approved by the dean of the college to which the student seeks admission.

ADMISSION OF SPECIAL STUDENTS: Upon the approval of the dean, students of mature age may be admitted for special work in such courses of instruction as they are qualified to take. They may not be admitted as candidates for a degree in a regular course unless they meet all normal requirements for admission.

ADMISSION PROCEDURE: Application for admission should be made to the Registrar, Duke University, Durham, North Carolina. Application forms and instructions will be sent to the candidate. It is the responsibility of the candidate to see that these forms are properly executed and, together with other requested material, sent promptly to the Office of Admissions.

Application prior to the final year of the secondary school course is not required. Formal steps looking toward admission should be initiated, however, early in the senior year and not later than February 1. Candidates for admission are requested to file all credentials by March 1. Candidates for admission to the Woman's College normally will receive notification of the decision of the Committee on Admissions between April 15 and May 1. Candidates for admission to Trinity College and the College of Engineering will be notified as decisions are made.

READMISSION OF FORMER STUDENTS: A student who, following withdrawal from college, desires to return should apply to the Registrar. When applying for readmission the student should make a detailed statement of his or her activities since leaving Duke University.

Financial Information and Living Accommodations



FEES paid by the students cover only a part of the cost of their instruction and of the operations of the University. Income from endowment and contributions from the alumni, alumnae, and other public-spirited men and women meet the balance, which constitutes more than half the total cost.

Fees

A registration fee of \$20.00 is required of all new students. This fee is payable only once; it is not refundable. A room reservation deposit of \$25.00 is also required. After a room is reserved, the deposit will not be refunded to accepted applicants who fail to enter the University. A tuition fee of \$325.00 and a general fee of \$75.00 are payable at the beginning of each semester. The general fee is in lieu of special fees usually charged for matriculation, use of laboratories, student health service, commencement, etc. Special fees for instruction in Applied Music are listed on page 113.

An advance deposit of \$25.00 is required of all students in residence at the time of spring registration in order to reserve a place in classes for the fall semester. This is applied toward payment of the general fee at the opening of the fall semester. The deposit will be refunded to students whom the University does not permit to return. Students who of their own volition fail to return are not entitled to a refund.

An advance deposit of \$25.00 is also required of old students who have been out of school for one or more semesters and have been accepted for readmission. It is applied toward payment of the general fee for the semester of readmission. The advance deposit is paid at the time of notification of acceptance and is not refundable.

An Air Force ROTC deposit of \$20.00 is required of students enrolling in Air Science to cover possible loss of military equipment issued to them. This deposit is refunded to the student upon return of issued equipment.

Refunds of tuition and other fees are made to students who withdraw within fourteen days after the beginning of the semester, with the exception of the advance deposits listed above. On and after the fifteenth day no refunds of fees are made. Stipulations governing the refunding of the \$25.00 room deposit are explained in the sections on Living Accommodations.

Students who register during the regular academic year for no more than two courses with a maximum credit of 8 semester hours are classified as special students. They are charged a registration fee of \$5.00 for each course, and \$21.50 for each semester hour of course credit. Students taking nine or more hours are charged full fees.

Students paying full fees may audit one or more courses without charge, provided they have the consent of the instructor. Students not paying full fees are charged \$10.00 for each audited course. Auditors submit no daily work, take no examinations, and receive no credit.

Students are entitled to one transcript free of charge. Additional copies are supplied at \$1.00 each. Records are not released when the Treasurer's Office reports an unpaid account.

Students may have their bills sent to parents or guardians provided the Treasurer has been notified in writing with sufficient antecedence. Failure of a student or of a parent or guardian to pay bills on the dates scheduled will debar the student from class attendance until his account is settled in full; subsequent withdrawal does not entitle him to a refund. No student is considered by the Faculty as a candidate for graduation until he has settled with the Treasurer for all his indebtedness to the University.

Estimated Expenses for an Academic Year

Incidental expenses depend upon the tastes and habits of the individual, but the estimated necessary expenses for an academic year are as follows:

	<i>Low</i>	<i>Moderate</i>	<i>Liberal</i>
Tuition	\$ 650.00	\$ 650.00	\$ 650.00
General Fee	150.00	150.00	150.00
Room Rent	175.00	175.00	225.00
Board	450.00	500.00	525.00
Laundry	30.00	40.00	50.00
Books	30.00	40.00	50.00
	<u>\$1485.00</u>	<u>\$1555.00</u>	<u>\$1650.00</u>

The actual fees and expenses, excluding travel and clothing, necessary for one year in residence as a student in Trinity College or the College of Engineering can be met with \$1485.00.

Student Aid

Duke University is interested in students with ability and ambition. It is the aim of the University Scholarship Committee and others affiliated with the Student Aid Program to provide, insofar as possible, the financial assistance required by worthy students. This assistance takes various forms. The actual cost to the University for each student

is more than twice the amount received from the student. The deficit is paid out of contributions and income from endowment. Scholarships and prizes enable students with inadequate resources to reduce the amount payable to the University. Loans are made available, and through the Student Employment Offices part-time jobs are arranged. Through the Student Aid Program an earnest effort is made to eliminate the economic status of the student as a criterion for admission.

Scholarships

Scholarships intended to aid needy and deserving students have been established from time to time by persons deeply interested both in Duke University and in the members of its student body. Scholarship endowments are held in trust and are kept separate from other holdings of the University. All income is applied in accordance with the terms of the gift or bequest.

Scholarships are awarded annually by a committee of the Faculty appointed by the President of the University. In some cases donors have specified certain limitations and conditions, but in all cases final award is made by the University Scholarship Committee.

Candidates for competitive scholarship prizes should initiate applications during the fall semester of the senior year of study in secondary school. Instructions concerning the specific requirements and deadline dates will accompany the application materials sent to applicants for these awards.

Candidates for remissions of tuition and scholarship grants should submit applications by April 15 of the year prior to the academic year in which assistance is sought.

All candidates for scholarships, prizes or grants are required to take the scholastic aptitude test of the College Entrance Examination Board in order to qualify for consideration by the Scholarship Committee. This test must be taken either in December or January prior to the September in which admission is sought.

All applications for scholarship prizes, scholarship grants, Industry scholarships or remissions of tuition should be addressed to the Registrar, Duke University, Durham, North Carolina.

SCHOLARSHIP PRIZES: Certain scholarships are awarded annually to encourage as students young men and women who give outstanding promise of becoming leaders in their chosen fields of endeavor. Recipients of these awards are, in general, students whose superior intellect and excellence as scholars and leaders mark them as individuals who have the ability to influence and direct the course of affairs.

In considering applications for Scholarship Prizes, no weight is given by the Scholarship Committee to the financial situation of the

candidate. The awards are based upon the proven merit of the individual rather than his need for financial assistance.

Thirteen Angier B. Duke Memorial Prizes of \$1,000.00 each are awarded annually to six men and three women who are residents of North Carolina, two men who are residents of South Carolina, and two men, residents of North or South Carolina, who are winners of at-large competitions. Any resident of the State of North Carolina or male resident of South Carolina who meets the stated requirements is eligible to apply regardless of where he or she prepares for college.

Six Duke University Regional Scholarships of \$1,000.00 each are awarded annually to male residents of designated regions listed below. Any qualified resident of a designated region will be eligible to apply regardless of where he prepares for college.

Region I: The District of Columbia; Albemarle, Clarke, Culpeper, Fairfax, Fauquier, Frederick, Greene, Highland, King George, Loudoun, Madison, Orange, Page, Prince William, Rappahannock, Rockingham, Shenandoah, Spotsylvania, Stafford, Warren, Westmoreland counties and the city of Alexandria in Virginia; Montgomery and Prince Georges counties in Maryland.

Region II: The state of Virginia excluding those counties comprising a part of Region I.

Region III: The state of Florida.

Region IV: The state of Georgia.

Region V: The state of Tennessee.

Region VI: The states of West Virginia and Kentucky.

Six Duke University National Scholarships of \$1,000.00 each are awarded annually to entering freshmen; three awards are made to men and three to women. Any qualified applicant for admission to the freshman class of Trinity College, the College of Engineering, or the Woman's College will be eligible to apply regardless of where preparation for College is completed.

Scholarship Prizes are awarded for one year and are renewable from year to year for a maximum duration of four years, on the condition that the holder maintain a scholastic average in the upper quartile of his or her class and further that he or she show evidence of developing the qualities of leadership which served as the basis for the original award.

Candidates for Angier B. Duke Memorial Prizes, Duke University Regional Scholarships, and Duke University National Scholarships must be eligible for admission to the freshman class of Trinity College, the College of Engineering, or the Woman's College in the ensuing academic year. A candidate must have attained scholastic standing in the highest quartile of his or her class as of the closing date of his or her most recently completed semester at the time of application.

A number of scholarship prizes are awarded annually to graduates of junior colleges transferring to Duke University. Only those students who come from junior colleges which are fully accredited by their regional association will be considered. All candidates must have maintained a minimum of a "B" average in the junior college program and must be able to complete their work for a baccalaureate degree at Duke University in two academic years. These awards will range in value from \$250.00 to \$1,000.00 annually depending on the financial need of the recipient.

Fifteen honorary tuition scholarships are awarded annually to undergraduates in residence. Five are awarded to members of the sophomore class, five to members of the junior class, and five to members of the senior class on the basis of the scholastic work of the preceding year.

INDUSTRY SCHOLARSHIPS: A number of scholarship awards financed by private corporations are available annually to undergraduate students at Duke University. The selection of the recipients of these awards is made by the University Scholarship Committee. These scholarships are assigned to students whose records of scholarship and leadership are outstanding and whose financial need can be demonstrated.

AWARDS AVAILABLE ANNUALLY TO ENTERING FRESHMEN: Union Carbide Research Scholarships (two awards). These awards are intended for students who have an interest in a career in research in industry following the completion of a program of graduate study. The awards cover tuition and fees, and provide a stipend for books and school supplies for a total which at Duke approximates \$750.00 annually. The awards are renewable for each of the years of undergraduate study.

General Motors Scholarship (one award). This award may be made to any entering freshman regardless of his or her chosen field of study. The annual stipend may range from \$200.00 to \$2,000.00 per year. The award is renewable for each of the years of undergraduate study.

Procter & Gamble Scholarship (one award). This award is intended for a student in the field of liberal arts. The award covers tuition and fees, and provides a stipend for books and school supplies for a total which at Duke approximates \$750.00 annually. The award is renewable for each of the years of undergraduate study.

The Texas Company Scholarship (one award). This award is intended for a student who will select a curriculum such as Accounting, Engineering, Business Administration, science, etc., which could prepare him for a career in the petroleum industry.

OTHER INDUSTRY AWARDS:

<i>Sponsoring Corporation</i>	<i>Value</i>	<i>Restrictions</i>
Carbide and Carbon Chemicals Co.....	\$800	Senior, Mechanical Engineering
Westinghouse-Electric Corporation.....	500	Senior, Electrical or Mechanical Engineering
American Viscose Corporation.....	500	Junior or Senior, Mechanical Engineering
Peat, Marwick, Mitchell Co.....	600	Senior, Accounting
General Electric Company.....	500	Senior, Business Administration or Accounting
Burlington Industries.....	500	Worthy Junior
Durham Bank and Trust Co.....	500	Durham County Student in Business Administration

REMISSIONS OF TUITION: Certain students attending Duke University are entitled to a remission of the tuition charge. Students in one of the privileged groups listed below are entitled to a maximum of eight semesters of free tuition at the undergraduate level. Each Summer Session in which work is taken and each semester spent in another institution will be counted as one of the eight allowable semesters. Only those students enrolled in the regular undergraduate program leading to a baccalaureate degree from Duke University are entitled to a remission of the tuition charge.

The purpose of the remission program is to assist the students in these categories to obtain a baccalaureate degree. It is assumed, therefore, that these students will make normal progress toward graduation. Failure to do so does not entitle a student to consideration for more than the allowable eight semesters.

All students entitled to a remission of tuition must apply to the Executive Secretary of the Scholarship Committee for this consideration. Students failing to receive remission for any part of their period of undergraduate study are not entitled to retroactive consideration.

GROUP I: All students preparing to enter full-time religious work in a denomination maintaining a paid ministry are entitled to remission. Both men and women who expect to enter the preaching ministry, or enter the teaching ministry, or serve as directors of religious education, or enter the medical mission field are qualified for this consideration.

All students in this group are required to have an interview with the Religious Vocations Scholarship Committee in the initial semester in residence and to renew their applications with this committee in each subsequent semester. In addition, all Group I students are required to sign a note in the amount of their tuition at the beginning of each semester. Details of this program may be obtained from the Executive Secretary of the University Scholarship Committee.

GROUP II: Children of ministers who are members of the North Carolina and Western North Carolina Conferences of the Methodist Church are entitled to remission as are the children of ministers of all faiths residing in Durham County, North Carolina. This consideration is given only to the children of resident members of the two North Carolina conferences who are giving their full time to religious work.

GROUP III: Remissions are given to the children, stepchildren, and adopted children of all staff members of Duke University in the following categories: (A) Staff members of the University listed in the catalog as "Officers of the University" who are employed on a full-time basis. (B) "Officers Emeriti." (C) Any deceased staff member of the University listed in the catalog as an "Officer of the University" employed on a full-time basis at the time of his or her death. (D) Deceased "Officers Emeriti."

ATHLETIC AWARDS: Duke University believes that a program of inter-collegiate athletics is a proper and desirable part of university life. Therefore, a limited number of Athletic Awards are available for students participating in football and basketball. Only a part of the students on the team squads, however, hold awards. There are no athletic awards for participants in track, swimming, lacrosse, cross country, baseball, golf, tennis, soccer, wrestling, and gymnastics.

The Athletic Award covers only those items which are approved under the rules of the Atlantic Coast Conference and National Collegiate Athletic Association in which Duke University holds membership.

SCHOLARSHIP GRANTS: Although sufficient funds are not available to assist all applicants who present requests for aid, a substantial number of Scholarship Grants are made each year to able students who need financial assistance in order to meet the cost of attending college. Any candidate for admission, therefore, who considers himself or herself to be in such need is eligible to apply for a Scholarship Grant.

Applicants for Scholarship Grants will be required to submit a detailed statement of financial resources.

The following scholarship funds are available to undergraduates who apply for scholarship grants.

FRED SOULE ALDRIDGE SCHOLARSHIP FUND

Established December 1947 by gift of Fred S. Aldridge, '98, and Mrs. Fred Aldridge and supplemented by annual contributions from the Durham County Alumni; the income to be used for scholarship aid, preference to be given to young men from Durham County.

GEORGE G. ALLEN SCHOLARSHIP FUND

Established July 1947 by gift of George G. Allen; the income to be used for scholarship aid to deserving boys and girls from Warren County, N. C., and, under certain conditions, to other worthy students.

ALUMNAE SCHOLARSHIP FUND

Established May 1940 by the Alumnae Association, in connection with the celebration of the Centennial of Duke University; the income to be used for scholarship aid to young women students of the Woman's College.

ALUMNI MEMORIAL SCHOLARSHIP FUND

Established December 1943 by several donors in memory of alumni of Duke University who lost their lives during World War II; the income to be used for scholarship aid to worthy students.

ATLANTA ALUMNI SCHOLARSHIP FUND

Established May 1941 by gifts of members of the Alumni Association of Atlanta, Ga.; the income to be used for scholarship aid to worthy students.

ALICE M. BALDWIN SCHOLARSHIP FUND

Established June 1945 and supplemented from time to time by gifts from students and alumnae in honor of Alice M. Baldwin, Dean of the Woman's College, 1923-1947; also supplemented by a gift from the Class of 1951 of the Woman's College in memory of Berenice Lipscomb and Betsy Thorup; to be used for scholarship aid to undergraduate students in the Woman's College.

BANKS-BRADSHAW SCHOLARSHIP FUND

Established 1913 by gift of W. L. Banks and Mike Bradshaw, '78; the income to be used for scholarship aid to worthy students.

EVELYN BARNES MEMORIAL SCHOLARSHIP FUND

Established 1953 in memory of Evelyn Barnes, the income to be used for scholarship aid to worthy students in the Woman's College.

HERBERT J. BASS SCHOLARSHIP

Established 1900 by gift of Mr. and Mrs. Herbert J. Bass of Durham, N. C., in memory of their son, Herbert J. Bass, Jr.; the income to be used for scholarship aid to worthy students.

ROBERT SPENCER BELL PRIZE

Established in 1942 by James A. Bell, '86, in memory of his son Robert Spencer Bell; the income to be used for scholarships to a North Carolina student in each of the Freshman, Sophomore, and Junior Classes enrolled in Trinity College or the College of Engineering.

EDGAR S. BOWLING SCHOLARSHIP FUND

Established 1928 by gift of Edgar S. Bowling, '99, in memory of his sister, Mrs. Maye Bowling Bennett, '12; the income to be used for scholarship aid, preference to be given to boys and girls from Durham and adjoining counties.

FRANKLIN BROWN FAMILY SCHOLARSHIP FUND

Established 1954 by a gift from Mr. and Mrs. W. Franklin Brown; the income to be used for scholarship aid to worthy undergraduate students.

ELIZABETH CROWELL CARNES FOUNDATION

Established January 1948 by bequest of Elizabeth Crowell Carnes, in memory of her parents, Jonas William Crowell and Virginia Vick Crowell; the income to be used for scholarship aid for young men and women of Duke University.

CENTENNIAL SCHOLARSHIP FUND

Established 1939 by gifts from several donors in connection with the Centennial celebration of Duke University; the income to be used for scholarship aid to worthy students.

CHRISTIAN EDUCATION SCHOLARSHIP FUND

Established by various contributions designated for scholarships in the Christian Education Movement; includes contributions from Julian S. Carr, Mrs. Annie A. Foushee, C. T. Johnson, H. E. Myers, the Pegram Family, W. P. Suggs, E. T. White,

Mr. and Mrs. J. C. Braswell and Mrs. R. C. Bruton, in memory of Alexander Walker; the Alumni of Harnett County, and others; the income to be used for scholarship aid to worthy students.

CLASS OF 1906 SCHOLARSHIP FUND

Established July 1937 by gifts from several members of the Class of 1906; the income to be used for scholarship aid to worthy students.

CLASS OF 1912 SCHOLARSHIP FUND

Established by gifts from several members of the Class of 1912; the income to be used for scholarships to worthy students.

CLASS OF 1914 SCHOLARSHIP FUND

Established December 1938 during the Centennial celebration of Duke University, by various members of the class; the income to be used for scholarship aid to worthy students, preference to be shown to descendants of the members of the Class of 1914.

CLASS OF 1918 SCHOLARSHIP FUND

Established by gifts from several members of the Class of 1918; the income to be used for scholarship aid to worthy students.

E. M. COLE FOUNDATION

Established 1920 by E. M. Cole, Charlotte, N. C.; the income to be used for scholarships for the benefit of undergraduate students preparing for the ministry.

ROBERT B. COX SCHOLARSHIP FUND

Established 1949 by gift of Robert L. Wolf and supplemented from time to time by other gifts; the income to be used for scholarship aid to undergraduate men.

WILL L. CUNINGGIM SCHOLARSHIP

Established 1934 by bequest of Mrs. W. L. Cuninggim, and supplemented by bequest of Mrs. Albert Bourne, in memory of Reverend Will L. Cuninggim; the income to be used for scholarship aid, preference to be given to graduates of the Methodist Orphanage, Raleigh, N. C.

ROSE M. DAVIS SCHOLARSHIP FUND

Established 1941 by Dr. Rose M. Davis; the income to be used for scholarship aid.

JERE R. DOWNING SCHOLARSHIP FUND

Established 1936 by Mrs. Alice M. Downing and her son, J. Robert Downing, '35, as a memorial to their husband and father, Jere R. Downing of Kennebunk, Me.; the income to be used for scholarship aid, preference to be given to students from New England.

B. N. DUKE SCHOLARSHIP FUND

Established 1939 by bequest of Sarah P. Duke in memory of her husband, Benjamin N. Duke; comprised of one-half of the income earned by the bequest of Sarah P. Duke to the B. N. Duke Endowment Fund; to be used for scholarship aid to worthy and needy students of Duke University.

DUKE UNIVERSITY SUNDRY SCHOLARSHIPS

Gifts by miscellaneous donors for current use as scholarships.

N. E. EDGERTON SCHOLARSHIP FUND

Established January 1953 by Mr. N. E. Edgerton, '21, through the Duke University Development Campaign; the income to be used for scholarship aid to worthy students, preference to be given to students from Wake County, North Carolina.

ENGINEERING SCHOLARSHIP FUND

Established by gifts of various persons; to be used for scholarship aid to engineering students.

WILLIAM P. FEW MEMORIAL SCHOLARSHIP

Established 1942 by gifts from various persons; to be used for scholarship aid to worthy students.

ARTHUR ELLIS FLOWERS SCHOLARSHIP

Established 1901 by Col. and Mrs. George W. Flowers, in memory of their son, Arthur Ellis Flowers; the income to be used for scholarship aid to worthy students.

GEORGE W. FLOWERS SCHOLARSHIP FUND

Established June 1927 by gift of Claude M. Flowers, '09, in memory of his father, Col. George W. Flowers, for many years a Trustee of Trinity College; the income to be used for scholarship aid to needy and worthy students.

ROBERT L. FLOWERS SCHOLARSHIP FUND

Established May 1939 by gift of R. L. Flowers; income to be used for scholarship aid to worthy students.

R. L. FLOWERS TRUST SCHOLARSHIP FUND

Established 1948 by bequest of Lily Parrish Flowers; the income to be used for scholarship aid for worthy students.

GENERAL UNIVERSITY SCHOLARSHIP FUND

Miscellaneous gifts from numerous persons; to be used currently for scholarship aid to worthy students.

GUILFORD COUNTY SCHOLARSHIP FUND

Established 1941 by miscellaneous gifts of several persons; the income to be used for scholarship aid to worthy students.

A. H. GWYN SCHOLARSHIP FUND

Established May 1941 by A. H. Gwyn, '18; the income to be used for scholarship aid to worthy students.

P. HUBER HANES SCHOLARSHIP FUND

Established 1939; consisting of 3/5 of the income accruing annually to the P. Huber Hanes Fund; to be used for scholarship aid; one scholarship in the Divinity School; two scholarships to members of the families of alumni; and two general scholarships.

P. HUBER HANES, JR., SCHOLARSHIP FUND

Established 1939; consisting of 1/5 of the income accruing annually to the P. Huber Hanes Fund; to be used for two scholarships for junior or senior students majoring in Business Administration.

J. WELCH HARRISS SCHOLARSHIP FUND

Established May 23, 1950 by gift of J. Welch Harriss, '28, and supplemented subsequently by additional gifts; the income to be used for scholarships to deserving young men from High Point, N. C., entering the Freshman Class of Trinity College.

B. D. HEATH SCHOLARSHIP FUND

Established 1903 by B. D. Heath; to be used for scholarship aid to worthy students from Union County, N. C.

HIGH POINT SCHOLARSHIP FUND

Established by gifts of members of the High Point Alumni Association, in connection with the celebration of the Centennial of Duke University; the income to be used for scholarship aid to students who are graduates of the High Point, N. C., High School.

WALKER P. INMAN MEMORIAL GIFT SCHOLARSHIP FUND

Established May, 1956 by gift of Mrs. Georgia P. Fagan; the income to be used for scholarship assistance to needy and worthy students seeking the degree of Bachelor of Science in nursing.

JONES SCHOLARSHIP FUND

Established 1951 by Edwin L. Jones, Sr., '12; Annabel Lambeth Jones, '12; Edwin L. Jones, Jr., '48; Lucille Finch Jones; and the J. A. Jones Construction Company in memory of James Addison Jones and Raymond A. Jones; a portion of the income to be used for scholarship aid to worthy and qualified students in the College of Engineering.

HUNTER JONES SCHOLARSHIP FUND

Established December 1947 by gift of Hunter Jones, '19, Durham, N. C.; the income therefrom to be used for scholarship aid to worthy students.

HENRY HARRISON JORDAN MEMORIAL SCHOLARSHIP FUND

Established December 1938 by gifts from George Way, B. Everett Jordan, '18, H. W. Jordan, Charles E. Jordan, '23, Mrs. H. C. Sprinkle, Jr., '24, and Frank B. Jordan, '27, in memory of their father, Reverend Henry Harrison Jordan, a member of the Western North Carolina Conference; the income to be used for scholarship aid to worthy students.

J. M. JUDD SCHOLARSHIP FUND

Established 1922 by J. M. Judd, '95, of Varina, N. C., with directions that the earnings be allowed to accumulate until such time as they are sufficient to provide a four-year tuition scholarship.

FRANK S. LAMBETH SCHOLARSHIP FUND

Established 1930 by bequest of Frank S. Lambeth, '80; the income to be used for scholarship aid to worthy students of Duke University.

D. M. LITAKER SCHOLARSHIP FUND

Established 1946 by gift of Charles H. Litaker, '28, in memory of his father, D. M. Litaker, '90, who for 47 years was an active minister in the Methodist Church; the income and, under certain conditions, a part of the corpus of the fund to be used for scholarship aid to undergraduate students, natives of the territory now embraced by the Western North Carolina Conference, who are preparing for the ministry.

MARY ELIZABETH DUKE LYON SCHOLARSHIP FUND

Established 1942 by Mary Washington Stagg, in memory of her mother, Mary Elizabeth Duke Lyon; the income to be used for scholarship aid to worthy students.

THE McALISTER SCHOLARSHIP FUND

Established December 1935 by Amelie McAlister Upshur in memory of her mother, Armatine Reynaud McAlister, and father, William Henry McAlister; the income to be used annually for a scholarship to one boy and one girl from each of the three states of North Carolina, South Carolina and Louisiana.

J. H. McCRACKEN MEMORIAL SCHOLARSHIP FUND

Established 1947 by J. H. McCracken, '22, and contributions from members of the First Methodist Church of Henderson, N. C., in memory of Reverend J. H. McCracken, '92, for many years a member of the North Carolina Conference; income to be used for scholarship aid.

T. W. McCRACKEN SCHOLARSHIP FUND

Established 1945 by Thomas W. McCracken, '15; the income to be used for scholarship aid for worthy students.

THE O. G. B. McMULLAN SCHOLARSHIP FUND

Established 1913 by gift of O. G. B. McMullan of Elizabeth City, N. C.; the income to be used for scholarship aid to worthy students, preference to be given to residents of Perquimans and Pasquotank counties, N. C.

THE LOUISE AND C. K. MASSEY SCHOLARSHIP FUND

Established 1953 by C. Knox Massey; to be used for scholarship aid to worthy students.

R. A. MAYER SCHOLARSHIP FUND

Established 1939 by gift of R. A. Mayer, '96, in memory of his father, Minor C. Mayer, and mother, Sarah R. Mayer, in connection with the Centennial celebration of Duke University, and supplemented subsequently by additional gifts; the income to be used for scholarship aid to worthy students, preference to be given to students from Mecklenburg County, N. C.

W. H. MOORE SCHOLARSHIP FUND

Established 1920 in memory of W. H. Moore, '71, by his wife, Mrs. W. H. Moore, and daughters, Mrs. W. E. Steele, Miss Maude Moore, Mrs. T. L. Parsons, Mrs. J. H. Ihrie, and Mrs. J. LeGrand Everett; the income to be used for scholarship aid to worthy students.

THOMAS R. MULLEN, JR., SCHOLARSHIP FUND

Established April 5, 1949, by gift of T. R. Mullen in memory of his son; the income to be used for scholarship aid to worthy young men and women.

J. A. ODELL SCHOLARSHIP FUND

Established 1897 by gift of James A. Odell; the income to be used for scholarship aid to worthy students.

J. M. ODELL SCHOLARSHIP FUND

Established 1897 by gift of J. M. Odell; the income to be used for scholarship aid to worthy students.

W. R. ODELL SCHOLARSHIP FUND

Established 1940 by gifts from Fred C. Odell, '02, Mrs. Ralph M. Odell, Arthur G. Odell, '06, and others, in memory of William R. Odell, '75, for more than 50 years a member of the Board of Trustees of Duke University; the income to be used for scholarship aid to worthy students.

HENRY A. PAGE SCHOLARSHIP FUND

Established January 1942 by gift of Henry A. Page, Jr., '07, and Gertrude Wetherill Page, in memory of his father, Henry A. Page, for many years a member of the Board of Trustees of Duke University; the income to be used for scholarship aid to worthy students, preferably those preparing for the study of medicine.

EDWARD JAMES PARRISH SCHOLARSHIP FUND

Established 1921 by Rosa Brown Parrish, in memory of her husband, Edward J. Parrish; the income to be used for scholarship aid to worthy students.

JOHN T. RING SCHOLARSHIP FUND

Established 1919 by gift of S. G. Ring and family of Kernersville, N. C., in memory of John T. Ring, '16, who was killed in France during World War I; the income to be used for scholarship aid to worthy students.

T. V. ROCHELLE SCHOLARSHIP FUND

Established 1945 by T. V. Rochelle, '14, High Point, N. C.; the income to be used for scholarship aid to a worthy and needy student who is a graduate of the High Point, N. C., High School.

SANDALS SCHOLARSHIP FUND

Established 1955 by contribution from Sandals, for the purpose of providing scholarship awards to rising sophomores in the Woman's College of Duke University.

ALEX H. SANDS, JR. SCHOLARSHIP FUND

Established 1956 by Alex H. Sands, Jr.; the income to be used for scholarship aid to worthy students.

JOSEPH H. SEPAK MEMORIAL SCHOLARSHIP FUND

Established 1950 by gifts from friends in memory of Joseph H. Separk, for many years a member of the Board of Trustees of Duke University; the income to be used for scholarship aid to worthy students, preference to be given to students from Gaston County, N. C.

J. RAYMOND SMITH SCHOLARSHIP FUND

Established 1939 by J. Raymond Smith, '17, Mt. Airy, N. C., in connection with the Centennial celebration of Duke University; the income to be used for scholarship aid to worthy students.

MARY ALYSE SMITH SCHOLARSHIP FUND

Established December 1946 by Mary Alyse Smith, '30, of Burlington, N. C., and her father, Marvin B. Smith, for scholarship aid to worthy North Carolina boys or girls.

WILLIS SMITH SCHOLARSHIP FUND

Established 1939 by Willis Smith, '10, and supplemented from time to time; the fund to be used for scholarship purposes.

THOMASVILLE SCHOLARSHIP FUND

Established 1940 by gifts of T. Austin Finch, '09, and J. Walter Lambeth, '16, by contributions made through the Centennial Fund; the income to be used for scholarship aid to worthy students.

MARY NEWBY TOMS SCHOLARSHIP FUND

Established 1906 by gift of Clinton W. Toms and supplemented from time to time by additional gifts; in May 1947, in connection with supplemental gifts to the Fund, it was established as a permanent endowment in memory of his wife, Mary Newby Toms; the income to be used for scholarship aid to worthy students, preference to be given to students from Durham and Perquimans counties, N. C.

HORACE TRUMBAUER MEMORIAL FUND

Established 1955 by contribution from Mrs. Helena S. Fennessy in memory of her father Horace Trumbauer. The income to be used for scholarship aid to worthy students, preference being given to students majoring in subjects which relate to the practice of Architecture.

UNDERGRADUATE SCHOLARSHIP FUND

Established 1950 to provide scholarship aid to deserving students in the undergraduate colleges of Duke University. In 1951 this fund was increased by the income from several Scholarship Funds which were not restricted in their use.

THE WAGGONER SCHOLARSHIP FUND

Established 1954 by contribution from T. R. Waggoner, '22 in memory of his parents, Thomas Spencer Waggoner and Eva Barnwell Waggoner; the income to be used for scholarship aid for worthy undergraduate students.

GEORGE W. WATTS SCHOLARSHIP FUND

Established 1897 by gift of George W. Watts; the income to be used for scholarship aid to worthy students.

WEATHERBY SCHOLARSHIP FUND

Established 1912 by C. E. Weatherby, Faison, N. C.; the income to be used for scholarship aid to worthy students.

WEST CAMPUS CHEST SCHOLARSHIP FUND

Established 1954 by the male undergraduate students of Duke University for the purpose of providing scholarship awards to male students in one of the undergraduate colleges.

FLORENCE K. WILSON SCHOLARSHIP FUND

Established 1955 by contribution from students of the School of Nursing; for the purpose of providing scholarship awards to students in the School of Nursing.

WOMAN'S COLLEGE FOREIGN STUDENT SCHOLARSHIP FUND

Established 1956 by the students enrolled in the Woman's College to make available assistance to students from other countries enrolled in the Woman's College of Duke University.

WOMAN'S PANHELLENIC SCHOLARSHIP FUND

Established May 25, 1949, by gifts of the Woman's College Panhellenic Association; income to be used for scholarship aid for a rising senior in the Woman's College of Duke University.

Loans

A number of loan funds have been established for the benefit of the students of Duke University. The most important and largest is the Angier B. Duke Memorial Student Loan Fund, which is administered through an advisory committee of officers of the University. The amount available to be loaned depends upon the income from investments and on the amount repaid on loans previously made to

students. The same committee of officers administers the other endowed loan funds of the University.

The committee in approving loans selects those students who, from the standpoint of character, scholastic attainment, personality and degree of financial need, are deserving of consideration.

The following regulations govern the operation of the loan fund program:

1. No loan will be made to a student who violates any of the regulations of the University or whose academic record is not satisfactory to the faculty.

2. As a general policy, a student must have spent one semester in residence before he is eligible to apply for a loan. During this period the loan committee will have an opportunity to acquaint itself with the worth and need of the individual applicants.

3. Loans will be made only to students who are taking approved courses of study that lead to a degree, and all loans must be arranged for not later than one week after the beginning of a semester.

4. Every applicant for a loan must give the names of three references who will be approached by the student Loan Office. Statements from these references must have been received and made a part of the file before any money will be advanced. None of these references may be a member of a borrower's family.

5. Long term loans are customarily made to defray only the expenses incurred for tuition, fees, or room rent.

6. In most instance no loans will be made to students owning and operating an automobile while in residence. In general, the Loan Committee feels that students in need of financial assistance will be unable to afford the cost of an automobile. Students with cars applying for loan assistance should be prepared to explain to the committee the reason for this circumstance and must be able to prove the necessity of possessing an automobile. Each case will be considered on the individual circumstances presented in the written application.

7. Interest on long-term student loans accrues at the rate of 1% from the date of each note and is payable during or before the week prior to the graduation exercise of each of the school years during which the borrower is enrolled at Duke University. After the student leaves the University permanently, the interest rate rises to 3% for the five year period required for payment. Any notes unpaid at the end of this five year period will bear interest at the rate of 6% until they are paid in full.

An extension of two years at the 1% interest rate is granted to those borrowers receiving a degree of Doctor of Medicine at Duke University. This extension covers the two year internship required of all medical students. An extension at the 1% interest rate is also granted to those borrowers who continue their study in other institutions of higher

learning. Proper proof of residence must be submitted annually to the Student Loan Office. Extensions of this sort will be renewed from year to year and the maximum period of extension will depend upon particular circumstance of each student.

8. Applications for loans should be made to the Loan Committee, Office of the Secretary, Duke University. A formal application for loan assistance may be made only on forms furnished in the Secretary's Office during the first week of each semester. The granting or withholding of a loan is a matter entirely within the discretion of the loan committee. A student is expected to use all other possible means of securing financial assistance before applying for aid from the Loan Fund.

ALBERT ANDERSON LOAN FUND

Established by the will of the late Albert Anderson; to be used for loans to worthy and deserving young men and women of the Methodist faith.

ALUMNI LOAN FUND

Established 1915 by gift from the Alumni Association.

PAUL M. BARRINGER BEQUEST FUND

Established 1932 by bequest from Paul Barringer; the income to be used in educating worthy young people; preference to be given those from Rowan County, N. C.

BYNUM BELOTE LOAN FUND

Established 1924 by E. T. Belote of Asheville, N. C., in memory of his son, Alfred Bynum Belote, student 1923-24.

A. D. BETTS LOAN FUND

Established 1919 by G. W. Vicks, '11, and wife, in memory of Reverend A. D. Betts, a member of the North Carolina Conference; other contributions by W. A. Betts and Mrs. L. P. Wilkins; to be used for the aid of young men preparing for the ministry.

FANNIE CARR BIVINS MEMORIAL FUND

Established 1928 by the Alumnae Association in memory of Fannie Carr Bivins, '96; income to be loaned to young women students upon the recommendation of the Alumnae Council and approval by the dean of the Woman's College.

BRANSON LOAN FUND

Established 1953 by bequest of Mrs. Clara S. Odell; the income to be used for loans to needy students.

CHRISTIAN EDUCATION LOAN FUND

Established 1921 as a part of the Christian Education movement in the Methodist Church in North Carolina; for use as a general loan fund.

CLASS OF 1902 LOAN FUND

Established 1932 by the members of the class at their 30th Anniversary Reunion.

JESSE A. CUNINGGIM LOAN FUND

Established 1896 by J. A. Cuninggim, '90; to be loaned to young men preparing for the ministry.

ANGIER B. DUKE MEMORIAL LOAN FUND

A charitable trust established during the year 1925 by B. N. Duke in memory of his son, Angier Buchanan Duke, for the stated purpose of assisting needy and worthy students in obtaining a college education.

ALEXANDER EDENS MEMORIAL LOAN FUND

Established 1920 by Lacy T. Edens, '24, Cora R. Edens, John A. Edens, L. D. Edens, '15 and L. F. Edens, in memory of Alexander Edens.

GENERAL LOAN FUND

Established 1900 by the North Carolina Conference, and supplemented from time to time by additional contributions by both the North Carolina Conference and the Western North Carolina Conference; to be used for no other purpose than to aid worthy students of the University.

W. O. GOODE EDUCATIONAL LOAN FUND

Established 1923 by W. O. Goode of the Western North Carolina Conference.

MARY HESTER HAMBRICK LOAN FUND

Established 1925 by W. R. Hambrick, Haldah Satterfield, John Jackson Hambrick, '16, and Robert T. Hambrick, '19, in memory of Mary Hester Hambrick, wife and mother; loans to be made to any needy students, preferably from Person County, N. C.

B. D. HEATH LOAN FUND

Established 1921 by B. D. Heath of Charlotte, N. C.; income to be used for students preparing for the ministry, preference to be given to one student annually from Union County, N. C.

HOLLAND HOLTON MEMORIAL LOAN FUND

Established March 1948 by friends and former students in memory of Holland Holton, '07, Professor of Education and Director of the Summer School of Duke University for many years; to be used in helping worthy young men and women in securing a college education.

J. B. IVEY LOAN FUND

Established 1922 by J. B. Ivey of Charlotte, N. C.; to be used for loans for worthy students.

W. K. KELLOGG FOUNDATION LOAN FUND FOR NURSES

Established 1942 by gift of the W. K. Kellogg Foundation; to be used for loans to students in the School of Nursing.

MINISTERIAL EDUCATION LOAN FUND

Established 1915 by the North Carolina Conference of the Methodist Church, to be used for loans to students preparing for the ministry.

WILLIAM NEAL STUDENT AID FUND

Established 1920 by John W. Neal in memory of his son, William Neal, student in 1919; to be used for loans to worthy and needy students.

NORTH CAROLINA CONFERENCE BOARD OF CHRISTIAN EDUCATION LOAN FUND

Established 1931 by gift of the Board of Christian Education of the North Carolina Conference; to be used for loans to students preparing for the ministry or other distinctive type of Christian service.

W. N. REYNOLDS LOAN FUND

Established by the late W. N. Reynolds, '86, of Winston-Salem, N. C.; to be used for loans to boys and girls of North Carolina seeking an education at Duke University; preference, however, to be given to graduates of the Nancy Cox Reynolds Memorial School, and the sons of employees of the R. J. Reynolds Tobacco Company, regardless of residence. In the discretion of the Executive Committee and under certain conditions, scholarships may be provided from the income from the fund.

ROANOKE RAPIDS HIGH SCHOOL LOAN FUND

Established 1925 by the graduating class of the Roanoke Rapids High School. Roanoke Rapids, N. C.; to be used for loans to students who are graduates of that school.

ELLA WESCOTT TUTTLE LOAN FUND

Established 1923 by D. H. Tuttle, '80, in memory of his wife, Ella Wescott Tuttle; to be used for loans to worthy young women seeking an education at Duke University.

JOSHUA VICK MEMORIAL LOAN FUND

Established 1920 by Mrs. J. W. Vick in memory of her husband, Joshua Vick; to be used for loans to needy students.

WAKE COUNTY ALUMNAE LOAN FUND

Established 1924 by the Raleigh Chapter of the Alumnae Association; to be used for loans to worthy women students.

HENRY CARSON WEST LOAN FUND

Established 1954 by gift from H. Carson West, '17, to provide loans for upper-classmen from North Carolina.

WINSTON-SALEM DISTRICT OF NORTH CAROLINA CONFERENCE LOAN FUND

Established 1923 by the Winston-Salem District of the Western North Carolina Conference of the Methodist Church; to be used for loans to students preparing for the ministry from the Winston-Salem District.

MARY POAGE WOOTEN LOAN FUND

Established 1922 by John C. Wooten, '98, in memory of his wife, Mary Poage Wooten; to be used for loans to worthy students.

Student Employment

Student employment offices are maintained to serve students who need part-time jobs. There are many opportunities both on the campus and in the city of Durham, and a considerable number of students each year help defray their college expenses by working.

Students may make application for part-time employment only after they have completed an application for admission and notification of acceptance has been given. The job application should be by letter prior to the reporting date for entrance, and a detailed job application form must be completed at the time of arrival at Duke University.

Those students in Trinity College and the College of Engineering in need of such employment may apply to Mr. J. M. Dozier, 217 Allen Building, West Campus. Students in the Woman's College should apply to the Assistant Dean of Undergraduate Women, 108 East Duke Building, East Campus.

Living Accommodations for Men

Craven, Crowell, Few, and Kilgo Quadrangles on the West Campus are reserved for undergraduate men. These quadrangles contain thirty-three Houses designated by letters of the alphabet from House A through House HH. The rooms are equipped as single and as double rooms. In some areas communicating doors between rooms provide suites for three or four persons. Kilgo and a part of Crowell Quadrangle are reserved for members of the Freshman Class.

Undergraduate men are required to live in the residence houses unless they are married or are living with parents or relatives. Any exception must be approved by the Dean of Men.

The rental charge for a single room is \$225.00 for the academic year, or \$112.50 each semester. The rental charge for a double room is \$350.00 for the academic year, or \$175.00 for each occupant, or \$87.50 for each occupant each semester. Rooms are rented for a period of not less than one semester, or in case of a medical student, one quarter, unless by special arrangement with the Housing Bureau. For a shorter period of occupancy, without special arrangement, the rate is \$1.00 per day with a minimum charge of \$25.00.

Room reservations are made through the Housing Bureau only after official acceptance for admission to the University. A \$25.00 room deposit is required of each applicant before a room reservation is made. The initial room deposit is effective during the student's residence in the University if his attendance is continuous in regular academic years. This deposit will be refunded to resident students under the following conditions:

- a. Within thirty days after the student has been graduated.
- b. Upon withdrawal from the University, provided written notice is received in the Housing Bureau by August 1, for cancellation of a reservation for the fall semester; and not later than January 15, for cancellation of a reservation for the spring semester.
- c. When the reasons requiring withdrawal are beyond the student's control.

No refund is made until the occupant has checked out of his room through the Housing Bureau and has settled all of his accounts with the Treasurer.

A resident student, in order to retain his room for the succeeding academic year, must make application at the office of the Housing Bureau for confirmation of the reservation in accordance with the plan that is published during the school year.

Any exchange of rooms must be arranged at the Housing Bureau. A charge of \$2.00 will be incurred for room changes made after September 1 in the fall and February 15 in the spring. Persons exchanging rooms without the approval of the Housing Bureau will be subject to charges for both rooms.

The authorities of the University do not assume responsibility for the persons selected as roommates. Each student is urged to select his roommate when the room is reserved.

Beds and mattresses (39" x 74"), tables, chairs, dressers, mirrors, and window shades are furnished by the University. The student supplies linens, blankets and pillows. Rugs, if desired, are not to exceed 54 square feet in size.

Duke University desires to provide for its students a residential environment conducive to academic achievement, the development of high ideals, and sound character. The institution asks and believes

that each student will cooperate in achieving these aims by arranging his personal belongings in an orderly manner, by caring for the buildings and furniture as he would do in his own home, and by observing a code based on gentlemanly behavior in an educational environment which demands respect for all residents. Regulations governing the occupancy of rooms will be supplied directly from the Housing Bureau when room reservations are made. Occupants are expected to abide by these regulations.

Living Accommodations for Women

Undergraduate women are required to live in Woman's College residence houses unless they are married or are living with parents or close relatives in the City. Under special circumstances, in the case of a mature student, the Dean may make an exception.

A counselor, who is a member of the Dean's staff, lives in each dormitory. She serves as adviser to individual students and, in cooperation with the student House Council, is responsible for the administration of the house.

The eight dormitories are alike in their organization. All four classes have full representation in each, approximately 30 spaces being reserved in each one for freshmen. Five of the dormitories, Alspaugh, Bassett, Brown, Giles, and Pegram, have both single and double rooms. Southgate and Jarvis have no single rooms, and Aycock has only a few.

Rooms are rented for the full school year, unless special arrangements are made in advance with the Dean of Undergraduate Women, but payment may be made by semester. Each occupant of a double room is charged \$200.00 for the school year or \$100.00 per semester; the occupant of a single room, \$250.00 for the school year or \$125.00 per semester. Normally the rent for a shorter period of occupancy than a semester is \$1.00 per day with a minimum charge of \$25.00.

Room reservations are made with the Woman's College Housing Bureau. An applicant who has been officially accepted as a resident student may reserve a dormitory room by paying a room deposit of \$25.00. If this deposit is not made within ten days after she is notified of her acceptance, her admission is cancelled. The initial room deposit is effective for the entire college course of the student whose attendance during regular terms is continuous. This deposit will be refunded to resident students under the following conditions:

- a. Within thirty days after the student has been graduated.
- b. Upon the student's withdrawal from the University, provided written notice is received in the Housing Bureau by August 1, for cancellation of a reservation for the fall semester; and not later than January 15, for cancellation of a reservation for the spring semester.

- c. When the reasons requiring withdrawal are beyond the student's control.

No refund is made until the occupant has checked out of her room through the Housing Bureau and has settled all of her accounts with the Treasurer.

Dormitory rooms are reserved by upperclass students in accordance with the plan that is published during the school year. All rooms that have not been reserved on or before the announced date will be considered vacant for the succeeding semester and will be assigned to others.

After a student has engaged a room, she is not permitted to move to another without the consent of the Woman's College Housing Bureau. A student leaving one room and occupying another without permission may be charged for both rooms for the entire semester. No student is allowed to rent or sublet her room to another occupant.

The Woman's College Housing Bureau selects a roommate for the new student who is assigned to a double room but has made no arrangements for a roommate. After a student has been in residence for one semester, however, she is responsible for obtaining and keeping a roommate if she continues to occupy a double room. If a student occupying a double room does not obtain a roommate within the time required—approximately two weeks after the beginning of the semester—she may be required to pay the rental consideration for the whole room.

Rooms are equipped with only the principal articles of furniture. The student provides her own linens, blankets, pillows, bedspreads, curtains, and lamps. She may supply additional articles such as scatter rugs and small tables or bookcases; but large rugs or overstuffed furniture, which make cleaning difficult, are prohibited.

Dining Service

The dining facilities on the West Campus include three cafeterias with multiple-choice menus, and the Oak Room where full meals and *a la carte* items are served. The cost for the academic year ranges from \$450.00 upward depending on the tastes of the individual. On the East Campus dining halls are located in the Union and in Southgate. Resident women may not board elsewhere than at these halls. The charge for board is \$200.00 per semester, payable at the time of registration.

In the Men's Graduate Center there is a cafeteria with multiple choice menus and a Coffee Lounge where sodas and sandwiches are

served from 11:30 A.M. to 11:00 P.M. The prices in these dining rooms are the same as on the West Campus.

It is hoped that present rates may be maintained. Charges, however, are necessarily dependent on costs of labor, foods, and materials, and some adjustment may be necessary.

Due to the large number of those served in the dining halls, it is not possible to arrange special diets for individual students. Special diet for the sick is served in the infirmary.

The Libraries



THE UNIVERSITY LIBRARIES, with 1,244,880 volumes and 1,792,938 manuscripts, provide exceptional resources and facilities for study and research by undergraduate and graduate students, and by visiting scholars. Between 40,000 and 50,000 volumes are added annually, and 75 foreign and domestic newspapers and 4,443 periodicals are received currently. A large collection of microfilms of rare books, newspapers, and periodicals is available.

A Chemistry library (16,669 volumes), Physics-Mathematics library (18,713), and Biology-Forestry library (56,401) are housed for convenience of use in the buildings of these departments. The libraries of the Schools of Divinity (75,784), Law (107,563), Medicine (60,115) and of the College of Engineering (24,231), are also shelved in the buildings of these schools, all on the West Campus.

The General Library, centrally located on the West Campus, has 775,593 volumes in all other fields. It is the principle working and research collection for students in the humanities and social sciences. The collection has been developed with care to support the work of the undergraduate curriculum and the more specialized needs of graduate and post-doctoral research. Basic collections of source materials are supported by the important publications of criticism and discussion. There are large collections of general periodicals, of the publications of European Academies, and of public documents of state, federal, and foreign governments, and international organizations. The newspaper collection (over 13,000 volumes and 8,092 rolls of microfilm) is particularly strong in papers from the states of the Atlantic seaboard, both North and South, with extensive holdings of Ante-bellum and Civil War papers of North Carolina, South Carolina, and Virginia.

The manuscript collections, relating chiefly to the South Atlantic region with particular strength in the Confederate period, is most extensive in the field of history, but it contains important source material on all phases of social and economic life as well as politics. There are groups of manuscripts in American and British literature, with a notable Walt Whitman collection, and a number of important mediaeval manuscripts, chiefly lectionaries and copies of the New Testament. Among many special collections of note are the Guido Mazzoni library of Italian and comparative literature, the Lanson Collection of French literature, Goethe and Dante collections, collections on Brazil, Peru, Ecuador, and the Philippines, the Holl Church history

library, eighteenth-century English poetry and prose, a Socialist collection, the Arents tobacco collection, the Thomas collection of books on Chinese history and culture, the George Washington Flowers Collection of manuscripts, books, newspapers, and pamphlets dealing with all phases of Southern history, and the Trent collection of Walt Whitman books and manuscripts.

The General Library building, which was modernized and enlarged in 1949, contains many special features which contribute to the preservation of material and facilitate their use by students and research workers. The book stacks, manuscripts, and rare book storage and reading rooms are air-conditioned. Two hundred and fifty carrels, some completely enclosed, are available in the stacks as places of study for graduate students. Graduates and advanced students are permitted access to the stacks upon application. On the ground floor are a newspaper reading room with a battery of microfilm reading machines and a microphotography laboratory with facilities for reproducing printed and other material. On the same floor are the manuscripts reading room and storage area. The first floor has periodical, graduate, and undergraduate reading rooms, the latter opening into an attractively furnished small library for recreational reading. In the north wing is the rare book reading room, with adjoining special collections rooms and storage stacks. The second floor houses the general reference and reading room, the circulation department and Main Loan Desk, and the Public Card Catalog, a union catalog of books in all the University libraries. There is also a catalog of the library of the University of North Carolina at Chapel Hill, whose books are available through inter-library loan.

On the East Campus, the Woman's College Library, in its attractive Georgian building, contains 108,752 volumes in an open stack collection, chiefly those most constantly needed in the undergraduate work of women students. A reference and general reading room, the Thomas Memorial Room, and the Booklovers' Room with open shelves of books for general reading, provide comfortable and attractive space for reading and study.

A "Student's Guide to the General Library" is available on request addressed to the Librarian of the University.

Reserve Officers Training Corps



THROUGH the Naval and Air Force Reserve Officers Training program the University is cooperating with the Department of Defense in the effort to provide a steady supply of well-educated officers for the active and reserve forces of the Nation.

The Naval Reserve Officers Training Corps

There are two basic programs through which students can qualify for Naval commissions upon graduation: one, the Regular Naval Reserve Officers Training Corps program, provides a maximum of four years in the University largely at government expense, followed by a temporary commission in the regular Navy or Marine Corps; the other, the Contract program, leads to a commission in the Naval Reserve or the U. S. Marine Corps Reserve.

The Regular Student—Scholarships are awarded on the basis of an annual nation-wide test and selection procedure. Students selected are appointed Midshipmen, USNR, and receive for a maximum of four years tuition, fees, and textbooks at government expense plus retainer pay at the rate of \$600 per year. The regular midshipman may take any course leading to a baccalaureate or higher degree with certain exceptions, e.g., pre-medicine and medicine, pre-theological and theological, music and art. His academic program must include 24 semester hours of Naval Science and he must complete a minimum of one year of college physics by the end of his sophomore year. In addition, three semester hours of trigonometry will be required if he has not previously completed such a course in a secondary school. The Regular goes on two summer training cruises aboard ship and receives aviation and amphibious indoctrination at naval shore stations the third summer.

Upon graduation he must accept a commission as Ensign, USN, or Second Lieutenant, USMC, if offered, after which he serves on active duty with the fleet for four years, if required by the Secretary of the Navy. Toward the end of the required active duty, he may request retention in the regular Navy or Marine Corps, or at his option be commissioned in the Reserve. Officers commissioned in the Reserve under such an option may be released to inactive duty except in times of national emergency.

The Contract Student—The contract student is selected from those regularly enrolled in Duke University who desire to qualify for a commission in the Naval or Marine Corps Reserve while pursuing their

normal courses of study. There is no restriction on the course of study which a contract student may pursue; nor is he required to take college physics while in the program. He must include in his academic program trigonometry (if not successfully completed in secondary school) and 24 semester hours of naval science. He has the status of a civilian who has entered into a mutual contract with the Navy and is not eligible for the benefits and retainer pay received by regular midshipmen. He is paid a subsistence allowance during his last two years in the NROTC, however, amounting currently to 90 cents per day. He goes aboard ship for one summer training cruise, normally between his junior and senior years. Upon graduation, he is commissioned in the Naval or Marine Corps Reserve and, if needed, reports for two years' sea service. Upon completion of the minimum active service requirements he may request transfer to the regular component of the Navy or Marine Corps, retention on active duty as a reservist, or transfer to the inactive reserve for a period of four years.

Both Regular and Contract midshipmen are deferred from Selective Service by virtue of their commitment to serve on active duty after graduation. The Navy furnishes necessary uniforms and equipment. Uniforms are worn only on drill days or other special occasions when prescribed by the Professor of Naval Science. Regular and Contract students receive the same instruction and wear the same uniforms. No distinction is made between the two, except in the handling of their records.

The Air Force Reserve Officers Training Corps

The unit functions as a regular department of instruction known as the Department of Air Science. It selects and trains students who possess the requisite character, intelligence, desire, and sense of duty to become Air Force officers.

For enrollment in the Basic Course (freshman and sophomore years) the student must: be a male citizen of the United States; be physically qualified under standards prescribed by the Air Force (due allowance will be made for defects which are correctible prior to the student's eligibility for appointment as a commissioned officer); be accepted by the institution as a regularly enrolled student; be not less than 14 years of age and not have reached 23 years of age at the time of enrollment; must successfully complete such general survey and screening tests as may be prescribed; and must sign a loyalty certificate with the U. S. Government. Students initially entering the University who have had previous preparatory or high school military training are normally accepted in Basic Air Science at the same academic level as that in which they are accepted by the University.

For enrollment in the Advanced Course (junior and senior years)

the student must have successfully completed the Basic Course or have had at least one year of honorable service in the Armed Forces of the United States; must execute a written agreement with the government to complete the Advanced Course *and accept a commission in the United States Air Force Reserve*, contingent upon remaining in school, and to attend Advanced Summer Training at the time specified; must agree to take orientation flights when offered; must be less than 28 years of age at the time of graduation; must successfully complete such general survey and screening tests as may be prescribed and must be selected by the Professor of Air Science and the appropriate authority of the University.

Students in the Basic Course may be deferred from Selective Service upon satisfactory completion of one semester of Basic Air Science. Advanced students are eligible for deferment as soon as they are enrolled formally in the Advanced Course. Selection for deferment is made by a board composed of representatives from the AFROTC and the University.

All uniforms, texts, and training equipment required for the Air Science Course are furnished at government expense, and students are paid a total of approximately \$600.00 for the two years of the Advanced Course.

Since the primary need of the Air Force is for flying officers, the great majority of students selected for Advanced Air Science must be physically qualified and desirous of applying for flying training after graduation. Upon graduation and completion of the Advanced Course, selected students will be offered commissions as Second Lieutenants in the Air Force Reserve. Reserve Officers who desire lifetime careers in the Regular Air Force may apply for regular commissions after serving on active duty for one year. An Air Science IV student who maintains an academic average in the upper quarter of all seniors in his major is eligible for designation as a Distinguished AFROTC Cadet and later, a Distinguished AFROTC Graduate. A designee, if fully qualified, will receive a regular commission upon graduation.

The Bureau of Testing and Guidance



THE UNIVERSITY maintains a Bureau of Testing and Guidance which provides a centralized program of educational, vocational, and personal counseling for students. In addition, the Bureau administers special group testing programs for University schools and departments and serves as the local testing center for a wide variety of national testing programs. The Bureau also carries on programs of

research in the field of measurement and counseling. Although the counseling, testing, and research services of the Bureau are designed primarily to meet the needs of the students, the faculty, and the staff of Duke University, these services are made available to individuals and organizations outside the University as its facilities permit. Requests for further information should be addressed to the Director, Bureau of Testing and Guidance, Duke University, Durham, N. C.

Appointments Office



THE APPOINTMENTS OFFICE is a service agency designed to aid graduates in solving the problem of post-college employment. Its primary function is to serve as an intermediary between students and prospective employers. It acquaints students with possibilities in business and professional fields; it assembles comprehensive records on each registrant and makes these records available to appropriate representatives; and it arranges interviews with prospective employers. The data assembled for individual records include academic achievement, training, experience, extracurricular activities, and honors. On occasion additional information of a specialized nature is secured. Confidential letters of recommendation are incorporated in the file of each registrant. The Office initiates contacts for students or cooperates with students who make contacts through personal efforts or through various departments of the University. It aids the registrant in directing his search to a field appropriate to his aptitude, training, and interest.

There are two major divisions of the Office: the Commercial Division, which handles all matters involving contacts with business and professional areas not related to formal education; and the Educational Division, which concerns itself with teaching and school administration positions at all levels. Students and alumni may register with either or both of these divisions.

The Office receives more calls for qualified personnel than it can supply from its registrants. It is to the mutual advantage of the students and the Office that a complete record of registrants be assembled by the fall of the senior year.

The Summer Session



THE SUMMER SESSION at Duke University makes available to Duke undergraduate students and to undergraduates from other universities and colleges a notable program of instruction in many fields of knowledge both academic and professional.

Undergraduates in Duke University who desire to accelerate their programs may complete the work for a degree in three years by attending two and one-half summer sessions.

Undergraduates from other colleges and universities may enjoy the special advantages of summer instruction at Duke and transfer their earned credits to their own institutions.

The Summer Session of 1957, will include two terms: Term I, June 11 to July 17; Term II, July 19 to August 24. By attending both terms it is possible for a student to earn as many as twelve semester hours of credit.

Instruction of interest to undergraduates will be offered in the summer of 1957 in the following departments and colleges: Botany, Chemistry; Economics; Education; Nursing Education; Engineering; English; Forestry; French; Geology; German; Greek; Health and Physical Education; History; Latin and Roman Studies; Mathematics; Philosophy; Physics; Political Science; Psychology; Religion; Sociology; Spanish; and Zoology.

Distinctive features of Summer Session instruction are provided by the program in marine biology offered at the Duke Marine Laboratory, Beaufort, North Carolina, and by various conferences in several of the Departments.

While the basic purpose of the Summer Session is to serve the academic and the professional requirements of those who are interested in their own educational advancement, the University recognizes the need of, and provides for, a varied recreation program both athletic and social.

Undergraduates of Duke University both men and women who plan to attend the Summer Session should enroll with the Dean of their own college in Duke University. Undergraduates in other universities or colleges who seek transfer credits should apply directly to the Director of the Summer Session, Duke University, Durham, North Carolina.

Registration and Academic Regulations



ORIENTATION PROGRAM: All freshmen and transfer students are required to participate in the activities of Orientation Week. The program includes general ability, achievement, and placement tests, orientation lectures, physical examinations, social events, special religious services, registration, and class enrollment.

The University considers the planning of a course of study to be of primary importance. Perhaps the most significant moments of Orientation Week, therefore, are those which a new student spends with his faculty adviser. With the results of the several tests which all freshmen take available to them, the adviser and the student plan a course of study adapted to the ability, achievements, and goals of the individual student. New students who miss the whole or a part of the Orientation Program place themselves at a serious disadvantage at the very outset of their college career.

ENROLLMENT AND REGISTRATION: Students in residence are required to submit to the appropriate dean, not later than the date of the spring registration, cards showing their selection of courses for the following year. An advance deposit of \$25.00 is required before the card may be submitted. These cards, approved by the dean, are filed for permanent record in the Central Records Office. Students who do not select their courses for the following year at the time appointed must be readmitted to the college by application to the Director of Admissions. Students whose course cards have been approved in the spring may enroll by mail during the summer. The same regulations, with the exception of the advance deposit, apply to registration for the spring semester.

Students who register in either semester at a date later than that prescribed in the calendar of the Bulletin must pay to the Treasurer a fee of \$5.00. They are counted as absent in the work they have missed in the courses to which they are admitted, and these absences carry the same penalty as do other absences from the course. Changes in courses for reasons not arising within the University require a payment of \$1.00 for each change made. No course may be elected later than one week after the opening of the semester, and no student may be admitted to any class without an official enrollment.

General Academic Regulations

QUANTITY CREDIT AND COURSE LOAD: The term of credit used is the semester hour which signifies one recitation a week throughout the semester. Two or three hours of laboratory work are equivalent to one hour of class work. Two semesters of seventeen weeks each constitute the academic year. For the degree of Bachelor of Arts or Bachelor of Science, credit for 124 semester hours is required; for a degree in Engineering, 148 semester hours.

The normal load of an undergraduate student in the Colleges of Arts and Sciences is five academic courses totaling 14 to 17 semester hours exclusive of physical education. The maximum number permitted is 19 semester hours, exclusive of physical education. In the College of Engineering the normal load is 17 to 19 semester hours exclusive of physical education. No student is permitted to take less than 14 semester hours of work without special permission from the dean or to take more than the normal load of work unless his average grade in the preceding semester is higher than C.

QUALITY CREDIT: The requirements for the degree are computed in semester hours and in quality points. Quality points are determined by grades as follows: for an A, four quality points for each semester hour; for a B, three quality points for each semester hour; for a C, two quality points for each semester hour; for a D, one quality point for each semester hour; for an F, no quality points. Credit for at least 248 quality points is required for the degree of Bachelor of Arts or Bachelor of Science, and at least 296 quality points for a degree in Engineering.

REQUIREMENTS FOR CONTINUATION IN COLLEGE AND FOR GRADUATION FROM COLLEGE: To continue in college and to graduate, students must, in addition to the requirements listed elsewhere in this Bulletin, pass a minimum number of semester hours, achieve a specified quality point ratio, and in the case of graduation earn a minimum number of quality points. The quality point ratio is calculated by dividing the accumulated number of quality points earned by the accumulated number of semester hours carried (not semester hours passed). These requirements are listed in the following table:

For continuation from	---	The minimum requirement is
The first to the second year	2	18 s.h. credit and a q.p.r. of 1.2
The second to the third year		42 s.h. credit and a q.p.r. of 1.4
The third to the fourth year		66 s.h. credit and a q.p.r. of 1.6
The fourth to the fifth year, if needed		90 s.h. credit and a q.p.r. of 1.75
For graduation from		The minimum requirement is
Trinity and the Woman's College		124 s.h., 248 q.p. and a q.p.r. of 1.9
The College of Engineering		148 s.h., 296 q.p. and a q.p.r. of 1.9

Students of the senior class, irrespective of their average grade in preceding years, must, in order to be eligible for graduation, complete the work of their senior year with a minimum average grade of C. In the case of engineers the C average requirement applies not only to all courses taken in their last year but also to work specified for the senior year in their particular engineering curriculum.

The minimum standards for continuation in the College of Engineering are the same as those listed above but since the semester hour requirement for graduation in engineering exceeds the requirement of the liberal arts colleges the standards may be adjusted to meet the special requirement of the college. Moreover, application of these standards is based on the courses required in the engineering curriculum.

In addition to the qualitative standards listed above students must pass a minimum number of hours each semester. Freshmen must pass at least 6 semester hours of work in their first semester and 18 semester hours in their first year; second semester freshmen and all other students must pass at least 9 semester hours each semester. The University may require a student whose record is considered unsatisfactory to withdraw, although he has met the minimum requirements set forth in this paragraph.

Reports on proficiency in academic work are sent to parents or guardians after the examinations at the end of each semester. In addition, reports on freshmen are mailed at each mid-semester period.

CLASS STANDING: In the Colleges of Arts and Sciences students to rank as sophomores must have to their credit at least 26 semester hours and 52 quality points; as juniors, at least 56 semester hours and 112 quality points; and as seniors, at least 90 semester hours and a quality point ratio of 1.75. In the College of Engineering to be classified as a sophomore they must have to their credit at least 30 semester hours and 60 quality points and must have passed certain specially designated courses of the freshman engineering curriculum; to be classified as a junior they must have at least 68 semester hours and 136 quality points and must have passed certain specially designated courses of the sophomore departmental engineering curriculum; and to be classified as a senior they must have at least 106 semester hours and a quality point ratio of 1.75 and must have passed certain specially designated courses of the junior departmental engineering curriculum.

In the Colleges of Arts and Sciences seniors may not take for graduation credit any course open primarily to freshmen; and juniors may not take for graduation credit more than one course open primarily to freshmen. A list of these courses is published in this Bulletin under "Courses of Instruction." With the consent of the department, how-

ever, majors in mathematics, the natural sciences, and science education may as juniors or seniors enroll for credit in the introductory courses in the natural sciences and mathematics.

Seniors who at the beginning of a semester lack no more than 9 semester hours for the fulfillment of the requirements for the A.B. or B.S. degree, may with the approval of the Dean of the Graduate School, enroll in graduate courses for a maximum total program of fifteen hours a week.

A tentative list of all candidates for the Bachelor's degree is prepared under the supervision of the dean as early in the college year as possible. A copy is furnished to each department of instruction for information and reference, and a copy is posted on the official bulletin board of the University for the information of the students concerned.

RESIDENCE REQUIREMENTS: A minimum of 30 semester hours of senior-level work in the Colleges of Arts and Sciences and 36 in the College of Engineering must be earned in residence. Students who meet this requirement but who still lack 6 to 8 semester hours in final fulfillment of requirements may take this work in another institution of approved standing, provided the course is approved by the head of the department concerned and by the dean.

Students who complete in a summer session the work required by the University for the Bachelor's degree will be granted the degree at the end of the summer.

GRADING, ATTENDANCE, AND EXAMINATIONS:

GRADING: Final grades are reported to indicate passing or failing work in designated courses. Final grades are:

(1) *Passing.* Passing grades are A, exceptional; B, superior; C, average; and D, inferior.

(2) *Failing.* A grade of F indicates that the student has failed the course and that in order to receive credit for the course he must repeat the work in class.

Special symbols are used to indicate the following:

(1) *Absence from the final examination.* In all cases in which the student is absent from a final examination, he receives an X in place of a final grade. If he does not present an acceptable explanation for his absence to the appropriate dean's office within forty-eight hours after the scheduled time for the examination, the X is converted to an F. A student absent from examination, if the absence has been excused by the dean, may receive an examination upon payment of a fee of \$5.00 to the Treasurer of the University. The instructor concerned arranges for examination in cases where absences are excused. An X must be cleared by the end of the semester following the examination missed.

(2) *Incomplete work.* If because of illness or other emergency a student's work in a course is incomplete, he may receive an I for the course instead of a final grade. Incomplete courses must be completed before the close of the succeeding semester; otherwise, the I is recorded as F and the course must be repeated in class if the student is to receive credit for it. In case a student whose work is incomplete is also absent from a final examination, he receives an X for the course.

(3) *Withdrawal.* The letter W is used to indicate official withdrawal from a course. If a student drops a course without permission from the dean, the grade for that course is recorded as F. If he drops with permission a course in which he is failing, the grade for that course is recorded as F unless, in the judgment of the dean, circumstances do not justify this penalty.

ATTENDANCE: Regular and punctual attendance in class work is expected of all students. Weekly reports of all absences, irrespective of class standing, are made by each instructor and filed in the dean's office. No instructor has the authority to excuse a student from class attendance; it is his duty to report all absences and tardies.

The requirements for continuation in college and for graduation from college emphasize the desirability of assumption by the student of responsibility for class attendance. Controls are exercised, therefore, during the first two years of college residence. Thereafter, full responsibility is placed on the student.

(1) *Regulations applicable during the first two years of college residence:* One unexcused absence per semester hour without penalty is allowed for personal obligations. Sophomores who in a normal schedule make averages of B or above in the preceding semester will be allowed two absences per semester hour for personal obligations, but will in all other respects be subject to the same regulations as other students.

The first three tardies in a given course are counted as one absence. Thereafter, each additional tardy is counted as one additional absence.

Absences due to illness when certified by a proper medical official will be excused. Absences due to authorized representation of the University may be excused. Officials in charge of groups representing the University are required to submit names of those persons to be excused to the appropriate dean's office forty-eight hours in advance of the hour when their absences are to commence. Absences due to individual and personal reasons will not be excused.

All absences immediately before and after announced holidays are counted as regular absences, and they result in a loss of two quality points for each absence in each class. Unexcused, consecutive absences, whether excessive or not, result in the loss of quality points as in the case of unexcused, excessive absences. Each excessive or consecutive absence results in the loss of quality points as follows: one

quality point for the first absence, two additional for the second, and three additional for the third. When the third unexcused, excessive or consecutive absence occurs, the student is debarred from the course with a loss of six quality points and an F in the course. When the student has incurred twelve absences, excused and unexcused, in any course he is required to drop the course unless the instructor and the dean concerned grant special permission for him to continue in the course.

When a student's course load is reduced, on account of excessive absences, to less than 12 semester hours, he is required to withdraw from the University.

(2) *Regulations applicable after two years of college residence:* Responsibility for punctual and regular attendance is placed on juniors and seniors. However, for absences before and after announced holidays two quality points are deducted for each absence in each class. Instructors are expected to refer to the dean for appropriate action any student who in their opinion is causing his work or that of the class to suffer by virtue of absences or tardies.

EXAMINATIONS: Final examinations are held in all subjects in January and May.

DEFICIENCIES IN COMPOSITION: The following regulations have been adopted by the Faculty:

1. Any student who must take English 1 and whose score in the English placement test indicates that he is not yet ready for English 1 must earn a passing grade in English L before being permitted to enter English 1.

2. In the fall of the junior year every student of Trinity College and of the Woman's College must take an examination in English usage with the following exceptions: (a) students exempted from English 1 and (b) students who earned grades of at least B and C in English 1-2. The regulation does not apply to students of the College of Engineering, which has special course requirements in English composition in addition to English 1-2. Students with irregular schedules resulting from acceleration or transfer to Duke after the fall of their junior year should take the examination in the fall of the year most nearly approximating the fifth semester. In any event, all students with the exceptions noted above must take this examination; it is a requirement for graduation. Any student desiring to postpone his examination must have permission in writing from the Dean. If it is not taken in the junior year, it must be taken during the succeeding fall, or at such other time as may be designated by the appropriate authorities of the University. Students who are proved deficient by this examination will be required to complete satisfactorily a special non-credit laboratory course in remedial English.

3. Whenever the work of a student in any course is unsatisfactory because of errors in English, the instructor may report the student to the dean, who will require him to enroll in remedial English until, in the opinion of the director of the Remedial Laboratory, the deficiency is removed.

4. All instructors are requested to advise their students each semester concerning this regulation.

Requirements for Degrees



DUKE UNIVERSITY offers in Trinity College, the Woman's College, and the College of Engineering, courses of study which lead to the degrees of: Bachelor of Arts; Bachelor of Science; Bachelor of Science in Civil, Electrical, or Mechanical Engineering; and Bachelor of Science in Nursing Education.

Bachelor of Arts

The requirements for the degree of Bachelor of Arts are based on the principle that the student will derive the maximum benefit from his college work if his program includes a broad distribution of studies among representative fields of culture, concentration within a special field, and some work of his own choice.

For graduation with the degree of Bachelor of Arts, the following course work must be completed in accordance with the academic regulations as stated in this Bulletin.

UNIFORM COURSE REQUIREMENTS	S.H.
English	6
Foreign Language	6-18
Natural Science	11
Religion	6
Social Science and History	12
Literature, Music, Art, and Philosophy	6
Physical Education	4
MAJOR AND RELATED WORK	42
ELECTIVES TO MAKE A TOTAL OF	124

These requirements are described in detail below. Descriptions of courses can be found under "Courses of Instruction, Trinity College and the Woman's College."

ENGLISH, 6 s.h.—This requirement is met by the completion of English 1-2. Students who demonstrate proficiency in English usage may be allowed to substitute 55 or 56 for English 1.

FOREIGN LANGUAGE, 6 to 18 s.h.—This requirement is met by the completion of the third college year of a foreign language. The languages which meet this requirement are French, German, Greek, Latin, and Spanish. The number of courses required depends on previous training and ability as shown on placement tests. Students presenting for entrance four units of Latin may satisfy the language requirement by the completion of the third college year of Latin or by two years of Greek. In exceptional cases, on the recommendation of the language department concerned and with the approval of the dean, a student who has completed the second college year of one language may satisfy the requirement by the completion of the first year of another language.

NATURAL SCIENCE, 11 s.h.—To satisfy this requirement a student must complete a laboratory course (8 s.h.) in one of the natural sciences (botany, chemistry, geology, physics, zoology), and one course of at least 3 semester hours selected from mathematics (except Mathematics 1), logic and scientific methodology (Philosophy 48, 103 and 104), or from the sciences listed above.

RELIGION, 6 s.h.—To meet this requirement 6 semester hours must be chosen from Religion 1, 2, 51, 52, 91, 94, 101, 103, 104, 114, 130, 132, 135, 181, 182.

SOCIAL SCIENCE AND HISTORY, 12 s.h.—To satisfy this requirement a student must complete 12 semester hours from the following basic courses: Economics 51-52; Education 84; History 1-2, or 51-52; Political Science 11-12, or 61-62; Psychology 91 to be followed if desired, by either Psychology 100 or 101; or Sociology 91-92. Six of the 12 semester hours must be taken in economics, history, political science, or sociology. Students who do not present for entrance two acceptable units of history must take History 1-2 or 51-52.

LITERATURE, MUSIC, ART, AND PHILOSOPHY, 6 s.h.—This requirement can be satisfied by a total of 6 semester hours in courses in English or American literature, foreign literature courses numbered above 100, literature courses in translation, courses in aesthetics, art, and music, and courses in Philosophy except 48, 101, 103, 104, and 109.

PHYSICAL EDUCATION, 4 s.h.—Physical education is required during each of the first two years and is normally completed by the end of the sophomore year.

MAJOR AND RELATED WORK, 42 s.h.—Prior to registration in the spring of his sophomore year, each student is required to choose his major field and confer with his departmental adviser about the requirements for major and related work.

The major work consists of 18 to 24 semester hours in one department above the introductory courses. Introductory courses may consist of two one-semester courses in all departments except the Departments of German, Latin, and Romance Languages where the introductory courses may consist of four one-semester courses. The choice of courses must be approved by the major department. The related work must be taken in at least two other departments and is selected subject to the approval of the major department and the dean; it may not include more than one course of 6 or 8 semester hours open primarily to freshmen. With the consent of the department, however, majors in mathematics, the natural sciences, and science education may include as related work introductory courses in mathematics and the natural sciences. Courses satisfying the uniform course requirements may also be counted toward the requirements in major and related work. Information on specific departmental requirements for major and related work can be found at the end of the department offerings in the section "Courses of Instruction." Several programs of study designed as preparation for professions are given in the section below entitled "Choice of a Major Field."

The total amount of work that a student may take in any one department toward the Bachelor of Arts degree is limited to a maximum of 36 semester hours. In the Department of Aesthetics, Art, and Music, and the Department of Philosophy, the Department of English, the Department of Economics, Accounting and Business Administration, and the Department of Romance Languages, a total of 54 semester hours is permitted, however, provided a total of not more than 36 semester hours is taken in any one division of the department.

ELECTIVES.—In addition to the uniform courses required and the major and related work, other courses must be completed to make a total of at least 124 semester hours, including 4 semester hours of physical education.

Students whose courses of study permit may elect a maximum of 18 semester hours in engineering, forestry, or medical science. The courses elected in these subjects must be approved by the major department and the dean of the college.

CHOICE OF A MAJOR FIELD

The requirement of 42 semester hours distributed, as specified above, between a major field and related work is based primarily on the belief that some advanced study in one subject, together with work in allied subjects, is a valuable part of a general education. The selection of a major field usually depends on a student's cultural or vocational interests.

GENERAL PROGRAM

The General Program is designed for the student whose primary interest is in one of the liberal arts subjects. The subjects in which major work is offered are: art, botany, chemistry, economics, education, English, French, geology, German, Greek, history, Latin, mathematics, music, philosophy, physics, political science, psychology, religion, sociology, Spanish, zoology.

SPECIALIZED PROGRAMS

The student who has chosen a vocation may wish to include specialized training in his program. The following programs of study in preparation for various professions or professional schools are outlined for the guidance of the student.

BUSINESS: The student who plans to enter business may elect, in addition to the uniform course requirements, the following courses to satisfy the requirements for the Bachelor of Arts degree.

Freshman Year: Economics 11 (recommended but not required).
Mathematics 5 (recommended but not required).

Sophomore Year: Economics 51-52, Economics 57-58.

Junior Year: Economics 105, Economics 138, Economics 143, Economics 168, Economics 181, and one course selected from the following: Economics 144, Economics 147, Economics 158, Economics 182.

Senior Year: Economics 153, Economics 188, Economics 191, and one course selected from the Economics group numbered above 100.

ACCOUNTING: A student who plans to qualify to take the Certified Public Accountant's examination should elect the following courses of study:

Freshman Year: Economics 57-58 (may be taken at this time with the permission of the department).

Sophomore Year: Mathematics 5 and 16 (recommended but not required).
Economics 51-52, Economics 171-172.

Junior Year: Economics 143, Economics 153, Economics 173-174, Economics 181, 182.

Senior Year: Economics 144 or Economics 184, Economics 275-276, and two courses from the following: Economics 175-176, Economics 177, Economics 178, Economics 180.

A student who does not take Economics 57-58 in the Freshman Year must take the course in the Sophomore Year and must make the necessary adjustments in the sequence of subsequent accounting courses.

Students majoring in accounting are urged to familiarize themselves with the educational requirements of the State in which they expect to practice.

RELIGIOUS WORK: A student who plans to enter the ministry or other religious work should have a broad liberal arts training. He may major in religion or any other subject. It is suggested that the student include in his program as many as possible of the following courses.

Freshman Year:	Religion 1-2, History 1-2.
Sophomore Year:	Religion (6 s.h.), Economics 51-52 or Political Science 61-62, English Literature (6 s.h.).
Junior Year:	Religion (6 s.h.), Psychology 91, English 151-152.
Senior Year:	Religion (6 s.h.), Sociology (6 s.h.), Philosophy (6 s.h.).

SOCIAL WORK: The student who plans to pursue professional studies in preparation for social work (such as family welfare, child welfare, public welfare, probation and parole, and similar forms of neighborhood and community work) should take his major work in sociology, with related work in other social sciences. The following courses should be included:

History 1-2, or 51-52.
Economics 51-52.
Political Science 61-62.
Psychology 91.
Philosophy (6 s.h.).

Zoology is recommended for the required course in Natural Science. Electives should be chosen mainly from history, economics, political science, education, sociology, philosophy, psychology, or religion.

TEACHING: The program for students who intend to teach is designed to prepare for positions both in the elementary school and in the high school. All prospective teachers, regardless of the type of school in which they expect to teach, (a) must take a sequence of four basic courses in the Department of Education, namely, Education 84, 88, 103, and 118; (b) should read carefully the certification requirements of the state in which they plan to teach and should arrange their programs with their departmental advisers accordingly; and (c) should begin early the required sequence of courses in education, taking Education 84, preferably during the sophomore year and Education 88 during the junior year.

HIGH-SCHOOL TEACHING. Students may meet certification requirements by qualifying in one teaching subject, but they are strongly advised to choose their electives to meet requirements in two teaching subjects. In any case their programs must include courses in education and in other subjects sufficient to satisfy the certification requirements of the state in which they will teach. Courses in materials and methods should be taken during the junior year; and courses in observation and practice teaching may be taken *only* in the senior year.

SCIENCE EDUCATION MAJOR. Students who intend to teach high school sciences may elect to major in Science Education rather than in a department. The program is designed to meet certification requirements and to provide the broad background of training in the sciences which is needed by science teachers. Students planning to enter this program should consult an adviser in the Department of Education and in one of the science departments. The basic requirements are:

Education 103, 118, 215-216, and 276 or 246.

Mathematics 5 and 6.

Sciences (botany, chemistry, geology, physics, zoology)
and mathematics above 6. 36-40 s.h.

1. Courses must be taken in at least two departments.

2. At least 12 s.h. must be taken in courses above the
introductory level.

ELEMENTARY SCHOOL TEACHING. Students preparing to teach in the elementary school must complete the following specific requirements: Education 101-102, 142, and 161, History 91-92, and Political Science 11-12, or 61-62, Economics 115, Economics 109, or 118, or 120, Music 151, Physical Education 102, and Health Education 112. Education 101-102 (which includes observation and practice teaching) should be reserved for the senior year.

PREPARATION FOR GRADUATE SCHOOL: The student who plans to enter a graduate school of arts and sciences for advanced study should consult an adviser in the field of the proposed advanced study concerning suitable preparation. Most graduate schools have definite requirements in foreign languages for all students. Candidates for the degree of Doctor of Philosophy are required to pass reading examinations, usually in German and French. In some cases other languages may be substituted. As soon as practicable, the student should ascertain the requirements of the particular graduate school he desires to enter.

PREPARATION FOR LAW SCHOOL: Students who plan to study law may select their major work in any field. The following courses are recommended:

Economics 51-52, 57-58.

English 55-56.

History 1-2 or 51-52, 105-106.

Philosophy 48 and 91.

Political Science 61-62.

Sociology 91-92.

PREPARATION FOR MEDICAL OR DENTAL SCHOOL:

Students planning to enter a medical or dental school should plan their programs of study from the first semester so as to include those courses required by the Medical Schools of their choice. Foundation courses for the study of medicine usually include: Chemistry 1-2, 61, 151-152; English 55-56; Mathematics 5, 6; Physics, 41-42; and Zoology 1-2, 53.

Special advisers are available for pre-medical and pre-dental students. The names of these advisers may be secured at the dean's office.

Bachelor of Science

For graduation with the degree of Bachelor of Science, the following course work must be completed in accordance with the academic regulations as stated in this Bulletin.

UNIFORM COURSE REQUIREMENTS	S.H.
English	6
French and German (second college year)	12-24
Mathematics	6
Natural Science	8
Economics, History, or Political Science	6
Religion	6
Restricted Elective	6
Physical Education	4
MAJOR AND RELATED WORK	48
ELECTIVES TO MAKE A TOTAL OF	124

These requirements are described below. Description of courses can be found under "Courses of Instruction, Trinity College and the Woman's College."

ENGLISH, 6 s.h.—This requirement is met by the completion of English 1 and 2. Students who demonstrate proficiency in English usage may be allowed to substitute English 55 or 56 for English 1.

FRENCH AND GERMAN.—Bachelor of Science candidates must normally complete at least the second college year, or equivalent as determined by examination, of both French and German. In special cases, with the permission of the major department and the dean, this requirement may be met by the completion of the third year of French or German. On recommendation of the major department and approval of the dean another language may be substituted for French or German.

MATHEMATICS, 6 s.h.—This requirement may be met by completion of Mathematics 5 and 6.

NATURAL SCIENCE, 8 s.h.—This requirement can be satisfied by courses in one of the natural sciences, namely, botany, chemistry, geology, physics, and zoology. The courses must include laboratory work, and may not be counted as part of the major or related work.

SOCIAL SCIENCE AND HISTORY, 6 s.h.—A student who does not present for entrance two acceptable units of history (exclusive of other social studies) must take a course in history; otherwise, he has his choice of economics, history, or political science.

RELIGION, 6 s.h.—To meet this requirement 6 semester hours must be chosen from Religion 1, 2, 51, 52, 91, 94, 101, 103, 104, 114, 130, 132, 135, 181, 182.

RESTRICTED ELECTIVE, 6 s.h.—To meet this requirement 6 semester hours in addition to other uniform course requirements must be selected from aesthetics, art, economics, education, English, foreign language, history, music, philosophy, political science, religion, and sociology.

MAJOR AND RELATED WORK, 48 s.h.—Major and related work consists of 48 semester hours in the Natural Sciences. This work must be selected from the departments of botany, chemistry, geology, mathematics, physics, psychology, and zoology. The major work consists of not less than 24 semester hours in one department, the choice of courses being subject to the approval of the department. The major work does not include courses primarily open to freshmen. The related work is taken in at least two other departments and is selected subject to the approval of the major department. With the consent of the department majors in mathematics and the natural sciences may include as related work introductory courses in mathematics, the natural sciences, and science education. A minimum of 14 semester hours of related work is required, 8 hours of which must be in laboratory science. Further information concerning the requirements for the major and related work in the various departments will be found at the end of the department offerings in the section "Courses of Instruction."

ELECTIVES.—In addition to the above, the student must elect sufficient courses to complete, with a quality point ratio of 1.9 the 124 semester hours necessary for graduation.

Students whose courses of study permit may elect a maximum of 18 semester hours in engineering, forestry, or medical science. The courses elected in these subjects must be approved by the major department and the dean of the college.

The total amount of work that a student may take in any one department toward the Bachelor of Science degree is limited to a maximum of 40 semester hours.

On or before the date announced for the spring registration, every sophomore in this group should select his major department in the Natural Sciences and arrange, under the guidance of an adviser in the major department, his program of studies for the following year. He should obtain the adviser's written approval of all courses selected in the division before submitting his program to the dean for final action. In like manner, each upperclassman will recheck the courses in his division of concentration each year with a representative of his major department.

Bachelor of Science in Civil, Electrical, or Mechanical Engineering

The College of Engineering offers fully accredited four-year programs in civil, electrical, and mechanical engineering leading to the degrees of B.S. in C.E., B.S. in E.E., and B.S. in M.E.

To facilitate and encourage the combining of a maximum of liberal arts studies with professional training, the College of Engineering has developed a special plan of cooperation with approved liberal arts colleges. Under this "three-two" plan, an outstanding student may follow an approved program of study at the cooperating liberal arts college for an initial period of three years and then come to Duke University to complete his studies at the College of Engineering in two more years. At the end of the total period of five years, a degree is granted by the cooperating liberal arts college, and a degree of Bachelor of Science in the appropriate branch of Engineering by the College of Engineering. Inquiries concerning this plan should be addressed to the Dean, College of Engineering, Duke University, Durham, North Carolina.

GROUPS OF STUDIES FOR THE DEGREE OF BACHELOR OF SCIENCE IN CIVIL, ELECTRICAL, OR MECHANICAL ENGINEERING

See the *Bulletin of the College of Engineering* for courses substituted by Air Force ROTC and Naval ROTC students in the following curricula:

Uniform Freshman Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
Engrg	1	Engineering Drawing . . .	2	Engrg	2	Descriptive Geometry . . .	2
Engl	1	English Composition . . .	3	Engl	2	English Composition . . .	3
Hist	E1	U. S. in World Today . . .	3	Hist	E2	U. S. in World Today . . .	3
Math	5	College Algebra	3	*Math	50	Analytic Geometry	3
Math	6	Trigonometry	3	*Math	51	Calculus I	3
Phys	41	General Physics	4	Phys	42	General Physics	4
P E		Physical Education	1	P E		Physical Education	1
			<hr/>				<hr/>
			19				19

GROUP ONE

CIVIL ENGINEERING
Sophomore Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
Chem	1	Gen. Inorg. Chemistry...	4	Chem	2	Gen. Inorg. Chemistry...	4
CE	51	CE Fundamentals.....	1	CE	62	Surveying II.....	2
*CE	61	Surveying I.....	4	Econ		52 or Political Science...	3
Econ		51 or Political Science...	3	Engl	E93	Written and Oral Comm...	3
Engrg	57	Statics.....	3	*Engrg	107	Strength of Materials...	3
Math	52	Calculus II.....	3	Math	53	Calculus III.....	3
PE		Physical Education.....	1	PE		Physical Education.....	1
			<hr/>				<hr/>
			19				19

Junior Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
CE	113	Route Surveying	2	CE	118	Engineering Materials	2
*CE	131	Structural Mechanics I . .	3	CE	135	Soils Mechanics	3
EE	123	Electric Circuits	4	CE	140	Structural Mechanics II .	3
Engrg	58	Dynamics	3	Engrg	109	Materials Laboratory . . .	1
		†Electives	6	*Engrg	128	Hydraulics	3
			18				6
			18				18

Senior Year

FIRST SEMESTER				SECOND SEMESTER			
			S.H.				S.H.
CE	123	Hydraulic Engineering . .	3	CE	116	Transportation Engrg . . .	3
CE	132	Steel and Timber	4	CE	124	Sanitary Engineering . . .	3
CE	137	Seminar	1	CE	133	Reinforced Concrete	4
ME	103	Thermodynamics	3	CE	146	Professional Engineering . .	2
ME	115	Mech. Engrg. Laboratory .	1		†	Electives	6
	†	Electives	6				
			18				18

*Courses which must be passed before engineering academic standing can be advanced.

†Part of a planned program of electives with minimums of nine semester hours required in the humanities and social sciences of all students and nine semester hours required in mathematics, sciences, or technical subjects of students not taking military science.

GROUP TWO
ELECTRICAL ENGINEERING
Sophomore Year

FIRST SEMESTER

		S.H.
Chem	1 Gen. Inorg. Chemistry...	4
EE	51 E. E. Orientation.....	1
EE	71 Instrumentation.....	1
Engrg	57 Statics.....	3
Engl	151 Public Speaking.....	3
Math	52 Calculus II.....	3
Phys	75 Modern Physics.....	3
PE	Physical Education.....	1

 19
SECOND SEMESTER

		S.H.
Chem	2 Gen. Inorg. Chemistry...	4
*EE	52 E. E. Principles I.....	4
Engl	E93 Written and Oral Comm..	3
Math	53 Calculus III.....	3
ME	52 Kinetics-Mechanism.....	4
PE	Physical Education.....	1

 19
*Junior Year***FIRST SEMESTER**

		S.H.
Econ	51 Prin. of Economics.....	3
EE	101 E. E. Principles II.....	3
EE	107 E. E. Prin. Laboratory...	1
Engrg	107 Strength of Materials....	3
Engrg	109 Materials Laboratory....	1
Math	111 Math. Analysis for Engrs.	3
ME	103 Applied Thermodynamics	3
ME	115 M. E. Laboratory.....	1

 18
SECOND SEMESTER

		S.H.
Econ	52 Prin. of Economics.....	3
*EE	102 E. E. Principles III.....	3
EE	108 E. E. Prin. Laboratory...	1
EE	106 Intro. to Electronics.....	3
EE	114 Electronics Laboratory...	1
ME	104 Applied Thermodynamics	3
ME	105 Fluid Mechanics.....	3
ME	116 M. E. Laboratory.....	1

 18
*Senior Year***FIRST SEMESTER**

		S.H.
EE	163 Elec. Mach. Laboratory..	1
EE	165 E. E. Seminar.....	1
EE	167 Adv. Electron. Lab.....	1
EE	257 Electric Machinery I....	3
EE	261 Adv. Electron. Networks I	3
EE	Approved EE Elective...	3
	†Approved Elective.....	6

 18
SECOND SEMESTER

		S.H.
EE	164 Elec. Mach. Laboratory..	1
EE	166 E. E. Seminar.....	1
EE	168 Adv. Electron. Lab.....	1
EE	258 Electric Machinery II....	3
EE	262 Adv. Electron.	
	Networks II.....	3
	Approved E. E. Elective..	3
	†Approved Elective.....	6

 18

*Courses which must be passed before academic standing can be advanced.

†It is recommended that at least 6 semester hours of the approved electives of the senior year be taken in liberal arts. Each student must carry a carefully planned approved program of electives, designed to meet a particular objective.

GROUP THREE

MECHANICAL ENGINEERING

Sophomore Year

FIRST SEMESTER

		S.H.
Chem	1	Gen. Inorg. Chemistry... 4
Econ	51	Princ. of Economics..... 3
Engrg	57	Statics..... 3
Math	52	Calculus II..... 3
Engl	E93	Written and Oral Comm. 3
PE		Physical Education..... 1
		—
		18

SECOND SEMESTER

		S.H.
Chem	2	Gen. Inorg. Chemistry... 4
Econ	52	Princ. of Economics..... 3
Engrg	107	Strength of Materials... 3
Engrg	109	Materials Laboratory... 1
*ME	52	Kinematics, Kinetics.... 4
Math	53	Calculus III..... 3
PE		Physical Education..... 1
		—
		18

Junior Year

FIRST SEMESTER

		S.H.
EE	123	Electric Circuits..... 4
ME	101	Thermodynamics..... 3
ME	105	Fluid Mechanics..... 3
ME	107	Materials and Processes.. 3
ME	113	Mech. Eng. Laboratory.. 1
ME	150	Machine Design..... 2
		Elective..... 3
		—
		19

SECOND SEMESTER

		S.H.
EE	124	Electric Machinery..... 4
*ME	102	Thermodynamics..... 3
*ME	106	Heat Transfer..... 3
ME	114	Mech. Eng. Laboratory.. 1
*ME	151	Machine Design..... 5
		Elective..... 3
		—
		19

Senior Year

FIRST SEMESTER

		S.H.
Math	111	Math. Analysis for Engrs. 3
ME	153	Heating, Air Conditioning 3½
ME	155	Int. Combustion Engines. 3
ME	159	Mech. Eng. Laboratory.. 1
ME	171	Instrumentation..... 2
ME	173	Seminar..... 2
		Elective..... 3
		—
		17½

SECOND SEMESTER

		S.H.
ME	154	Refrigeration..... 3½
ME	158	Industrial Engineering. 3
ME	160	Mech. Eng. Laboratory 2
ME	162	Power Plants..... 3
ME	163	Advanced Mechanics.. 3
ME	174	Seminar..... 1
		Elective..... 3
		—
		18½

*Courses which must be passed before engineering academic standing can be advanced.

Bachelor of Science in Nursing Education

The requirements for the degree of Bachelor of Science in Nursing Education are designed to prepare qualified graduate nurses for administrative, teaching, and supervisory positions in schools of nursing and in nursing service agencies.

To be eligible for admission to Duke University as a candidate for this degree a student must meet the following requirements:

1. Graduation from an approved secondary school with at least fifteen acceptable units of credit. (See specific requirements for admission to Trinity College and the Woman's College.)

2. Graduation from an approved school of nursing which provides satisfactory preparation in medical, surgical, pediatric, and obstetric nursing, as a minimum (psychiatric nursing is desirable).

3. Satisfactory scores on specified tests.

4. Supervisory ratings from three individuals, preferably former teachers and supervisors with whom the individual has had fairly recent contact.

Credit for 120 semester hours (exclusive of physical education) with a quality point ratio of 1.9 is required for the degree of Bachelor of Science in Nursing Education. The work of the final year must be taken in residence at Duke University. The program of studies leading to this degree must include:

	S.H.
1. MINIMUM GENERAL EDUCATION REQUIREMENTS.....	38-50
May be taken at Duke University or at any accredited college or university.	
English 1-2	6
*Natural science	8
History (1-2 or 51-52)	}
Economics (51-52)	
Political Science (61-62)	
Sociology (91-92 or 101)	3-6
Psychology (91, 100 or 101)	3-6
†Electives	12-18
2. BASIC NURSING PROGRAM.....	maximum 40
May be taken at the Duke School of Nursing or at any approved school of nursing. The amount of credit which is granted for the nursing school program is determined on an individual basis.	
3. COURSES IN EDUCATION AND NURSING EDUCATION.....	3
88 Psychological Foundation of Modern Education.....	3
118 Educational Psychology—Psychological Development.....	3
160N Social Foundations of Nursing Education.....	3
101N The Curriculum of the School of Nursing.....	3
115-116N Nursing Education: Principles and Practices.....	8
117 Community Nursing Service—Seminar in Field Trips to Community Agencies	3
4. FIELD OF CONCENTRATION.....	15
Fifteen semester hours in one field, such as chemistry, physics, psychology, sociology, zoology, or in a clinical area in conjunction with related subjects. No freshman work may be included in these 15 semester hours.	
5. PROFESSIONAL EXPERIENCE	
One year of experience as a graduate nurse is required before the degree is awarded.	

* Botany 1-2, Chemistry 1-2, Geology 51-52, Physics 1-2, Zoology 1-2.

† Literature, art, music, religion, ethics, and language are suggested.

Academic-Professional Courses

The provision whereby a senior may elect the work of the first year in a professional school of the University shall apply solely to eligible students in Trinity College or the Woman's College. The privilege of completing a combined course for the degree is conditioned upon admission to the professional school at the close of the junior year. A student thus admitted registers as a senior in the College and as a first-year student in the professional school.

ACADEMIC-FORESTRY COMBINATION

A student who has completed the program of study given below with an average grade of C or higher in accordance with the academic regulations as stated in this Bulletin may, with the approval of the Dean of the College and the Admissions Committee of the School of Forestry, transfer to the School of Forestry. Upon the satisfactory completion of the work of the first year in the School of Forestry the student may become eligible for the degree of Bachelor of Science from Trinity College, Duke University. This provision shall apply solely to eligible undergraduates who have completed three years in residence at Duke University.

Students wishing information concerning admission to the School of Forestry are invited to consult with the dean of that school. Completion of the first three years of work necessary to qualify for the Academic-Forestry Combination does not insure admission to the Duke University School of Forestry, nor impose any restriction upon the School's freedom in selecting students for admission. The professional degree of Master of Forestry may be obtained upon the satisfactory completion of the work of the second year in the School of Forestry.

The program of studies in preparation for admission to the School of Forestry under the combination program includes the following work:

UNIFORM COURSE REQUIREMENTS

	S.H.
Uniform Course Requirements for the B.S. Degree	48-66
Additional Required Courses	24-26
Electives to Make a Total of	94
Summer Field Work	13

These requirements are described in the Requirements for the Bachelor of Science degree in this Bulletin. Spanish may be substituted for French in the foreign language requirement. The natural science requirement is met by completion of Botany 1-2. The economics, history, or political science requirement is met by completion of Economics 51-52. The student who does not present for entrance two acceptable units in history must meet the restricted elective requirement by completion of 6 semester hours in history.

ADDITIONAL REQUIRED COURSES.—The additional required courses are as follows:

	S.H.
Chemistry 1-2	8
Engineering Drawing 1-2	4
Geology 51	4
Physics 1-2	8
	<hr/> 24

ELECTIVES.—The electives are normally chosen from botany, chemistry, economics, mathematics and philosophy. A minimum of 94 semester hours must be

obtained, exclusive of summer field work, to meet uniform course requirements, additional required courses, and electives.

SUMMER FIELD WORK.—This work of 13 weeks, preferably to be taken upon completion of the junior year, includes:

	S.H.
Civil Engineering S110. Plane Surveying	4
Forestry S149. Forest-tree Identification.....	1
Forestry S150. Forest Surveying and Aerial Photo Interpretation	4
Forestry S151. Forest Mensuration	4
	<hr/> 13

Students in this combination should have their programs approved by the special adviser for students in the Academic-Forestry Combination. The name of this adviser may be obtained at the dean's office.

ACADEMIC-LAW COMBINATION

A student who has completed with an average grade of C or higher, 96 semester hours of undergraduate work, including the uniform course requirements for the degree of Bachelor of Arts and the work of the junior year in his major and related fields, may, with the approval of the dean of the College, transfer to the Duke University School of Law and be eligible for the degree of Bachelor of Arts from Duke University upon the satisfactory completion therein of the work of the first year.

It is understood that this provision shall apply solely to eligible undergraduates who have completed three years in residence in Duke University, and that not less than the full first-year's work of the Law School will be acceptable for credit towards the bachelor degree.

No single discipline or program of study can be described as the best preparation for the study of law since there are various methods of approach to legal study.

Completion of the undergraduate work necessary to qualify for the Academic-Law Combination does not insure admission to the Duke University School of Law, nor impose any restriction whatever upon its freedom in selecting students for admission. Students wishing further information are invited to consult with the Dean of the School of Law.

Courses of Instruction

Trinity College and the Woman's College



NOTE: Courses primarily for freshmen are numbered from 1 to 49; those primarily for sophomores are numbered from 50 to 99; those primarily for juniors and seniors from 100 to 199; those primarily for seniors and graduates from 200 to 299. The amount of credit for each course is given in semester hours following the description of the course.

The designation (w) or (E) indicates that the course is to be given on the West Campus or on the East Campus. Odd-numbered courses are offered in the fall semester, and even-numbered courses are offered in the spring semester. Double numbers separated by a hyphen indicate that the course is a year-course and must normally be continued throughout the year if credit is received. A student must secure written permission from the instructor in order to receive credit for either semester of a year-course. Double numbers separated by a comma indicate that although the course is a year-course credit may be received for either semester without special permission.

COURSES OPEN PRIMARILY TO FRESHMEN

Air Science 1-2
 Art 1-2, 1L-2L
 Botany 1, 2
 Chemistry 1-2
 Economics 11
 Education 1, 5
 English 1-2
 French 1-2, 3-4
 German 1-2, 3-4
 Greek 1-2, 15
 Health Education 41
 History 1, 2, El-2

Latin 1-2, 3, 4
 Mathematics 1, 5, 6, 16
 Music 1-2, 11-12, 47-48
 Naval Science 101, 102
 Philosophy 48, 49
 Physical Education 1, 2
 Physics 1-2, 41-42
 Political Science 11-12
 Religion 1, 2
 Spanish 1-2, 3-4
 Zoology 1, 2

AESTHETICS, ART, AND MUSIC

PROFESSOR RANSOM R. PATRICK, CHAIRMAN; ASSOCIATE PROFESSOR EARL G. MUELLER, DIRECTOR OF UNDERGRADUATE STUDIES IN ART; ASSOCIATE PROFESSOR HALL, SUPERVISOR OF FRESHMAN INSTRUCTION IN ART; ASSOCIATE PROFESSOR JULIA W. MUELLER, DIRECTOR OF UNDERGRADUATE STUDIES IN MUSIC; ASSOCIATE PROFESSOR BONE, SUPERVISOR OF FRESHMAN INSTRUCTION IN MUSIC; ASSOCIATE PROFESSORS JENKINS, MARKMAN, AND SUNDERLAND; ASSISTANT PROFESSORS BRYAN, HANKS, KLENZ, SAVILLE, AND WITHERS; MISS PRIOLETTI, MESSRS. BRODERSON AND STARS

AESTHETICS

121. THE PRINCIPLES OF ART CRITICISM.—The development of criteria for making sound critical judgments based on analyses of painting, sculpture, architecture, and design. 3 s.h. (E)

PROFESSOR PATRICK

FOR SENIORS AND GRADUATES

202. PHILOSOPHY OF ART.—A study of some fundamental issues in aesthetics, with particular reference to the fields of literature, music, and painting. Problems discussed include: the nature and purposes of the arts; meaning in the arts; art and morality; the role of standards in art criticism; aesthetic judgment; interpretation and evaluation. 3 s.h. (E) ASSISTANT PROFESSOR WELSH

221-222. HISTORY OF AESTHETICS.—Theories of art and beauty in the western world from antiquity to the present. Some attention will be given the developed theories of aesthetics in the Far East. (Formerly 213-214) 6 s.h. (E)

PROFESSOR PATRICK

ART

HISTORY OF ART

1-2. INTRODUCTION TO ART HISTORY.—A historical survey of the development of architecture, sculpture, painting, and the minor arts as material manifestations of the culture of the western world from ancient to modern times, with some reference to primitive, Oriental, and other non-western cultures. The visual arts as a record of a whole civilization. The course will provide the student with terminology and principles necessary to formation of judgments. Open only to freshmen; others, see Art 51-52. 6 s.h. (E & W) STAFF

51-52. INTRODUCTION TO ART HISTORY.—A historical survey of the development of architecture, sculpture, painting, and the minor arts as material manifestations of the culture of the western world from ancient to modern times, with some reference to primitive, Oriental, and other non-western cultures. The visual arts as a record of a whole civilization. The course will provide the student with terminology and principles necessary to formation of judgments. The aims of this course are identical with those of Art 1-2; the content and method are adapted to the capacities of upperclassmen. Not open to upperclassmen who have received credit for Art 1-2. A senior in his last semester may receive credit for one semester. 6 s.h. (E & W) STAFF

131. ART OF THE HELLENIC WORLD.—After a preliminary treatment of the late Aegean the course deals with the development of the major arts of ancient Greece from the geometric period through the Graeco-Roman style and incorporates a survey of vase painting. 3 s.h. (W) ASSOCIATE PROFESSOR MARKMAN

132. ROMAN ART.—The course opens with a preliminary survey of Etruscan and early Roman art, then deals with the major and minor arts of the republican period, imperial Rome in Italy and the provinces, to the early Christian style in the East and West. 3 s.h. (W) ASSOCIATE PROFESSOR MARKMAN

133. MEDIAEVAL ARCHITECTURE.—A survey of Christian architecture in the Near East, the Balkans, Russia, and western Europe from the beginnings of the mediaeval style in the late classical period to its disintegration in the fifteenth century. (Formerly 101) 3 s.h. (E) ASSOCIATE PROFESSOR SUNDERLAND

134. MEDIAEVAL PAINTING AND SCULPTURE.—A study of painting, including mosaics, manuscripts, stained glass, and sculpture, in western Europe from the late classical period through the fourteenth century. (Formerly 102) 3 s.h. (E) ASSOCIATE PROFESSOR SUNDERLAND

135. RENAISSANCE ARCHITECTURE.—A study of the early phases of the new style based on design elements taken from ancient Rome which replaced the dying Gothic style in Italy in the fifteenth century and in the rest of western Europe in the sixteenth century. 3 s.h. (E) ASSOCIATE PROFESSOR SUNDERLAND

136. NORTHERN RENAISSANCE ART.—A study of book illumination, panel painting, graphic arts, and sculpture as expressions of literary, religious, and philosophical ideas of the fifteenth and sixteenth centuries in the Low Countries, Germany, and France. The formation of the northern realistic tradition in late Gothic Art and the relationship of the North with the Italian Renaissance will be developed in detail. Some emphasis will be placed on individual artists such as the Van Eycks, Van der Weyden, Bouts, Van der Goes, Bosch, Bruegel, Grünewald, and Dürer. (Formerly 125) 3 s.h. (E) ASSOCIATE PROFESSOR E. MUELLER

137. ITALIAN RENAISSANCE PAINTING AND SCULPTURE.—The evolution of art forms in Italy during the fifteenth and sixteenth centuries with emphasis on the art of Florence, Rome, and Venice. (Formerly 123). 3 s.h. (E)

ASSOCIATE PROFESSOR JENKINS

138. EUROPEAN ARCHITECTURE 1550-1750.—A study of the alteration of the High Renaissance ideal by Mannerist and Baroque designers in Italy, and the consequences for the rest of western Europe, especially for absolutist France and parliamentary England. 3 s.h. (E)

ASSOCIATE PROFESSOR HALL

139. THE RISE OF CONTEMPORARY ARCHITECTURE.—A study of the sources and evolution of the architecture of today, from the eighteenth century conflict between Romantic Historicism and Industrialism to the work of Gropius, LeCorbusier, Wright, and their successors. (Formerly 105) 3 s.h. (E)

ASSOCIATE PROFESSOR HALL

140. BAROQUE PAINTING AND SCULPTURE.—The styles of the seventeenth and eighteenth centuries in European countries as examples of the international culture of the period. (Formerly 126). 3 s.h. (E)

ASSOCIATE PROFESSOR JENKINS

141. AMERICAN ART.—A survey of architecture, sculpture, and painting in America from the time of the first settlers to the present day, including a consideration of the contributions of the English, Dutch, French, and Spanish to the artistic heritage of the United States. (Formerly 94) 3 s.h. (E)

ASSOCIATE PROFESSOR SUNDERLAND

142. MODERN PAINTING AND SCULPTURE.—The development of European painting and sculpture from the period of the French Revolution to the present. Introduction to parallel and contemporary trends in the United States. (Formerly 129 and 130) 3 s.h. (E)

PROFESSOR PATRICK

143. THE HISTORY OF PRINTS AND DRAWINGS.—A historical and critical study of drawings and prints from the fifteenth century to the present with reference to functions, values, and relationships to other forms such as painting, sculpture, and the book. (Formerly 133) 3 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER

FOR SENIORS AND GRADUATES

215. RELIGIOUS ART OF THE ANCIENT NEAR EAST.—A specialized study of the development of art, particularly architecture and sculpture, as the material expression of religious ideas in Egypt, Mesopotamia, and in part of Syria and Palestine, to the Persian conquest. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

216. RELIGIOUS ART OF THE CLASSICAL WORLD.—A specialized study of the religious art, particularly architecture and sculpture, of Greece and Rome, with special emphasis on the monuments in the Near East. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

217. AEGEAN ART.—A study of the problems of Aegean art as the forerunner of Greek art and in relation to the contemporary civilization of the eastern Mediterranean world. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

218. EARLY GREEK ART.—A study of the problems of the origin and development of Greek art in the Geometric period to the end of the Archaic. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

233. EARLY MEDIAEVAL ARCHITECTURE.—The development of religious architecture from the time of Constantine to the end of the First Romanesque style in the third quarter of the eleventh century. 3 s.h. (E)

ASSOCIATE PROFESSOR SUNDERLAND

234. ROMANESQUE SCULPTURE.—The development of sculpture in western Europe from the early Christian period through the culmination of Romanesque art in the west portal of Chartres Cathedral. 3 s.h. (E)

ASSOCIATE PROFESSOR SUNDERLAND

240. ARCHITECTURE OF NORTH AMERICA.—A study illustrating the transplantation of European architectural customs since the sixteenth century; the time-

lag in transit and acceptance of later European developments; the gradual assumption of confident independence in design; and the emergence of international leaders in the United States. (Formerly 106) 3 s.h. (E) ASSOCIATE PROFESSOR HALL

DESIGN

Students other than art majors may receive not more than eight semester hours credit for work in studio courses. For any number of semester hours of credit in studio courses an equal number of hours must be taken in History and Criticism. The introductory courses 1L-2L or 51L-52L are prerequisite for all courses in Design.

1L-2L. DESIGN LABORATORY.—This course aims to develop the student's visual faculty through practice with design elements and experience with media. Freshmen intending to elect further courses in Art are advised to carry this course concurrently with Art 1-2. Open only to freshmen enrolled in Art 1-2; others, see Art 51L-52L. 2 s.h. (E) ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

51L-52L. DESIGN LABORATORY.—The aims, content, and method of this course are similar to those of Art 1L-2L. Upperclassmen intending to elect further courses in Art are advised to carry this course concurrently with Art 51-52. Open only to upperclassmen enrolled in Art 51-52, and to those who have completed Art 1-2 or 51-52 without electing Design Laboratory. A senior in his last semester may receive credit for one semester. 2 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

53-54. BEGINNING STUDIO.—A studio course offering experiment and practice with formal elements of composition in various media. Particular emphasis will be given to drawing; watercolor, collage, and three-dimensional media will be secondarily considered. 4 s.h. (E) ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

55, 56. PAINTING.—A studio course designed to give experience in painting media with individual and group criticism, and discussion of important historic or contemporary ideas in painting as related to student work. Prerequisite: Art 53-54 or consent of the instructor. 4 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

157, 158. ADVANCED PAINTING.—Emphasis is given to the techniques of various painting and design media. Prerequisite: 55, 56. 4 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

159, 160. PRINTMAKING.—This course presupposes a knowledge of design and skill in drawing. Practice in wood engraving; block printing; and in copperplate engraving, etching, aquatint, and drypoint. Reference will be made to prints in relation to the design of the book, and historic examples of the art of the print will be analyzed in the study of these techniques. Prerequisite: 53-54. 4 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

DEPARTMENTAL MAJOR IN ART

Prerequisite: Introduction to Art History (1-2 or 51-52); or, with the approval of the Director of Undergraduate Studies, equivalent hours in 100 level courses which form a background for the History of Art.

Major Requirements: The student will select in consultation with the departmental adviser a sequence of courses emphasizing either the History of Art or Design.

a. History of Art: 24 semester hours which must include courses at the 100 level distributed over the entire field of Art History, and a concentration of courses in at least two areas.

b. Design: 22 semester hours, of which 16 must be in Design and 6 from courses in the History of Art and Theory.

Related Work: 18 hours which must include work in the field of Aesthetics and Criticism (Aesthetics 121, 221-222); 9 hours in two other departments should be elected from courses in History, English, German, Romance Languages, Greek, Latin and Roman Studies, History of Music, Philosophy, Sociology, Anthropology, Psychology, and the History of Religion.

MUSIC

Courses in music are offered both for the general student who wishes to acquire knowledge of music as literature and on a more technical level for those prepared to major in the field. The courses marked • are open to general students without prerequisites.

THEORY

•11-12. THEORY I.—The elements of harmony, rhythm, and form; the visual and aural recognition of scales, intervals, triads, and seventh chords, and their functions in relation to the system of tonality; harmonization of melodies; development of rhythmic discrimination. Designed for those students who wish to pursue a more technical study of music. Three lectures and two laboratory hours. Open only to freshmen. 8 s.h. (E) STAFF

•61-62. THEORY I.—An amplification of Music 11-12. Open to upperclassmen who have not had Music 11-12. 8 s.h. (E) STAFF

73-74. THEORY II.—A continuation of Music 11-12, plus analysis and composition of the smaller forms; further development of proficiency in harmonization; continuation of aural training; introductory study of counterpoint. Prerequisite: Music 11-12 or 61-62. 6 s.h. (E) ASSISTANT PROFESSORS BRYAN AND KLENZ

117-118. THEORY III.—A continuation of Music 73-74. Emphasis upon development of technical and expressive means and stylistic treatment by practical work in composition, and analysis and observation of larger forms; further study of counterpoint. The completion of an original large form composition for chamber group, chorus, or orchestra. Prerequisites: Music 11-12 or 61-62, and 73-74. 4 s.h. (E)

ASSISTANT PROFESSOR KLENZ

121. CONDUCTING.—The conducting of orchestral and vocal scores. Score-reading and analysis, principles of interpretation, establishment of vocal and instrumental conductorial techniques leading to practical experience in conducting the department musical organizations in rehearsal. Prerequisites: Music 11-12 or 61-62, and 73, or consent of the instructor. 3 s.h. (E) ASSOCIATE PROFESSOR BONE

122. ORCHESTRATION.—A study of the technical characteristics and transpositions of the instruments of the modern symphony orchestra and concert band. Instrumentation of piano scores or original compositions for string, woodwind, brass ensembles, and for full symphony orchestra or concert band. Prerequisites: Music 11-12 or 61-62, and 73, or consent of the instructor. 3 s.h. (E)

ASSOCIATE PROFESSOR BONE

HISTORY AND CRITICISM

•1-2. INTRODUCTION TO MUSIC.—Rhythm, melody, harmony, form, instruments of the orchestra, development of listening technique, and critical appreciation. Study of the lives and works of great representative composers from 1700 to the present. Open only to freshmen; others, see Music 51-52. 6 s.h. (E)

ASSOCIATE PROFESSOR BONE; ASSISTANT PROFESSORS HANKS AND WITHERS

•51-52. INTRODUCTION TO MUSIC.—Rhythm, melody, harmony, form, instruments of the orchestra, development of listening technique, and critical appreciation. Study of the lives and works of great representative composers from 1700 to the present. The aims of this course are identical with those of Music 1-2; the content and method are adapted to the capacities of upperclassmen. Open only to upperclassmen who have not completed Music 1-2. 6 s.h. (E & W) STAFF

•133. ORCHESTRAL LITERATURE.—A study of orchestral suites, overtures, concerti, symphonies, and symphonic poems selected from literature of the eighteenth century to the present. (Not offered in 1956-57). 3 s.h. (E)

ASSOCIATE PROFESSOR BONE

•134. CHORAL LITERATURE.—A study of representative oratorios, cantatas, and masses from Bach to Stravinsky; aesthetic and religious implications of sacred choral composition and performance from the Baroque to the present. 3 s.h. (E)

ASSISTANT PROFESSOR SAVILLE

135. PIANO LITERATURE.—A comprehensive survey of the great works for keyboard instruments, from the time of the English virginal composers to the present. Prerequisites: Music 47A, 48A, 97A, and 98A, or consent of the instructor. 3 s.h. (E) ASSISTANT PROFESSOR WITHERS

136. SOLO SONG LITERATURE.—A study of standard recital repertoire; early Italian and English songs, German lieder, the French and English art song. Open to junior and senior Applied Voice majors. 3 s.h. (E) ASSISTANT PROFESSOR HANKS

137. CHAMBER MUSIC.—A study of form, style, and interpretation of masterpieces of chamber music. Prerequisites: Music 1-2 or 51-52, or 11-12 or 61-62, or consent of the instructor. 3 s.h. (E) ASSOCIATE PROFESSOR J. MUELLER

138. CONTEMPORARY MUSIC.—A critical survey of contemporary stylistic trends and theory in the light of their twentieth-century background. Prerequisites: Music 1-2 or 51-52, or 11-12 or 61-62, or consent of the instructor. 3 s.h. (E) ASSISTANT PROFESSOR KLENZ

147-148. HISTORY OF MUSIC.—The history of the development of music as a manifestation of Western culture from mediaeval to modern times. The rise of Christianity through the Renaissance, first semester; the Baroque to the present, second semester. Prerequisite: Music 1-2 or 11-12 or 61-62, or consent of the instructor. 6 s.h. (E) ASSISTANT PROFESSORS KLENZ AND SAVILLE

Formerly 95-96 and 145-146. 147 not open to students who have had 145-146. 148 not open to students who have had 95-96.

*164. MUSIC IN THE NINETEENTH CENTURY.—A study of the music of the nineteenth century, from Beethoven to Debussy, with attention to artistic and literary influences, and the relations among the creative minds of the time. Individual projects. 3 s.h. (E) ASSOCIATE PROFESSOR J. MUELLER

*165. OPERA LITERATURE.—A study of opera from Handel to Berg; aesthetic and cultural implications of opera from the Baroque to the present. 3 s.h. (E) ASSISTANT PROFESSOR SAVILLE

195-196. COLLEGIUM MUSICUM.—Studies in the integration of music history, theory, and performance. Survey of sources, monuments, and bibliographical techniques. Preparation for performance of representative musical literature through analysis, realization of notations, and stylistic reconstruction. Classroom discussion and reports; also laboratory. Designed for music majors in history or theory and open to others by consent of the instructor. 4 s.h. Laboratory may be taken separately under Applied Music, Medium F. (E) ASSISTANT PROFESSOR KLENZ

MUSIC EDUCATION

57-58. VOCAL DICTION.—Problems of diction as specifically applied to the art of singing. Required of all Applied Voice majors. 2 s.h. (E) ASSISTANT PROFESSOR HANKS

106. PIANO METHODS AND MATERIALS.—A study of the materials and methods of piano pedagogy. The appropriate choice of essential and supplementary literature. Development of technique, style, and musicianship. Supervised practice teaching. Prerequisites: Music 47A, 48A, 97A, and 98A, or consent of the instructor. 3 s.h. (E) ASSISTANT PROFESSOR WITHERS

107. VOCAL PEDAGOGY.—The problems of private vocal teaching. A detailed study of the function of the vocal mechanism and of the psychological factors in teaching. Open to junior and senior Applied Voice majors, and others with the consent of the instructor. 3 s.h. (E) ASSISTANT PROFESSOR HANKS

151. PUBLIC SCHOOL MUSIC EDUCATION.—For Elementary Education majors. Development of the child through participation in and understanding of music. Child voice and song; rhythmic activity; discriminative listening; music-reading; use of elementary instruments such as auto-harp, psaltery, and the rhythm band instruments. Music as a creative art in its own right and as an adjunct to other studies in the elementary school. 3 s.h. (E) ASSISTANT PROFESSOR SAVILLE

APPLIED MUSIC

The study of Applied Music concerns the use and understanding of technics of performance in relation to the standard literature of each medium or ensemble group. Instruction is offered in the following media: A. Piano; B. Strings; C. Woodwinds; D. Brass; E. Voice; F. Ensemble—Piano, Instrumental, Vocal, and the Departmental Ensembles listed below. Instruction in media A through E may be private or in classes limited to a minimum of 4 and a maximum of 7 students. Class instruction is restricted to the first 4 grades of proficiency. Class instruction shall be designated by adding the letter X to the appropriate medium and year-in-school classification. (Example: junior year, Woodwinds, class instruction is recorded 147CX.)

Students who wish to enroll in Applied Music courses *must* consult with the appropriate faculty member *before* registering for a course.

47A, 48A; 97A, 98A; 147A, 148A; 197A, 198A. PIANO.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSISTANT PROFESSOR WITHERS; MISS PRIOLETTI

47B, 48B; 97B, 98B; 147B, 148B; 197B, 198B.—VIOLIN, VIOLA, 'CELLO.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSOCIATE PROFESSOR J. MUELLER; ASSISTANT PROFESSOR KLENZ

47C, 48C; 97C, 98C; 147C, 148C; 197C, 198C. WOODWINDS.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSOCIATE PROFESSOR BONE

47D, 48D; 97D, 98D; 147D, 148D; 197D, 198D.—BRASS.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSISTANT PROFESSOR BRYAN

47E, 48E; 97E, 98E; 147E, 148E; 197E, 198E. VOICE.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSISTANT PROFESSOR HANKS

47F, 48F; 97F, 98F; 147F, 148F; 197F, 198F. ENSEMBLE.—For freshmen, sophomores, juniors, seniors. Prerequisite: consent of the instructor. 1 s.h. (E) STAFF

Credits: Credit for Media A through E is granted on the basis of 2 s.h. per semester for one period of private study and a minimum of 6 hours practice per week; 1 s.h. per semester for one period of class study and a minimum of 6 hours practice per week.

Credit for instruction in Medium F is granted on the basis of 1 s.h. per semester for one period of instruction per week and a minimum of 6 hours practice per week. No additional fee required.

For any number of hours in Applied Music an equal number of hours must be taken in Music Theory or in Music History and Criticism. Students other than Music Majors may receive not more than 8 s.h. credit for work in Applied Music.

Music Majors may take a minimum of 6 s.h. and a maximum of 18 s.h. in Applied Music according to the following areas of concentration:

Majors in Music Theory or in Music History and Criticism must earn 6 s.h. credit in Applied Music. (Credit may be reckoned from Grade I.)

Majors in Applied Music may earn a maximum of 18 s.h. credit in Applied Music.

Majors in Music Education who expect to teach music in the public schools should plan their academic programs in close consultation with the Director of Undergraduate Studies in Music. The credit hours in Applied Music required for certification are, in most states, in excess of the maximum number of hours allowable for satisfaction of the Bachelor of Arts degree at Duke University. The detailed program of courses is available through the office of the Chairman of the Department.

Fees per semester: Fees are charged for Applied Music Media, A, B, C, D, E, and for practice facilities. They are payable to the Treasurer's Office of Duke University at the beginning of each semester as follows:

One ½ hour private lesson per week for one semester.....\$45.00

Two ½ hour private lessons per week or one 1-hour private

lesson per week for one semester..... 80.00

One 1-hour class lesson per week for one semester..... 20.00

Three hours use of cubicle with piano per week for one semester (Theory and Voice Class students).....	7.50
Six hours' use of cubicle with piano per week for one semester (Piano and private Voice students).....	15.00
Six hours use of cubicle without piano per week for one semester	10.00

DEPARTMENTAL ENSEMBLES

Brass Ensemble	Madriral Singers
Chamber Orchestra	Piano Ensemble
Collegium Musicum	Vocal Ensemble

DEPARTMENTAL ORGANIZATIONS

Duke University Concert Band
Duke University Symphony Orchestra

DEPARTMENTAL MAJOR IN MUSIC

Prerequisite: Music 11-12 or 61-62.

Major Requirements: 24 s.h. including 6 s.h. in Applied Music. The major student shall select, in consultation with his departmental adviser, a sequence of Music courses emphasizing (a) theory, or (b) history and criticism, or (c) education, or (d) the use and understanding of a particular medium.

AIR SCIENCE

PROFESSOR TODD, COLONEL, USAF, CHAIRMAN; ASSISTANT PROFESSOR BARNHILL, MAJOR, USAF, DIRECTOR OF UNDERGRADUATE STUDIES; INSTRUCTOR CANFIELD, CAPTAIN, USAF, SUPERVISOR OF FRESHMAN INSTRUCTION; INSTRUCTORS ENGLISH, CAPTAIN, USAF, AND KNOX, CAPTAIN, USAF

ELIGIBILITY REQUIREMENTS.—All physically qualified freshmen who are citizens of the United States and are enrolled in Trinity College or the College of Engineering are eligible to enroll in the Air Force ROTC. Veterans may be exempted from the freshman and sophomore courses under certain conditions. In special cases where permission has been granted, certain qualified students from the Graduate and Professional Schools may be enrolled.

DEPOSIT REQUIRED.—Each student must make a deposit of twenty dollars with the University Treasurer to insure return of all government property.

AIR FORCE ROTC COURSES.—All students pursue the same generalized courses. No flying training is included in the college program. All specialized training will be given when the individual enters the Air Force.

The courses are established by the United States Air Force and are approved by the College as electives for all undergraduates. Field or laboratory instruction in leadership, drill, and exercise of command is included as a part of all courses to indoctrinate the student in the fundamental principles of command.

BASIC COURSES

The following courses are required of students in the Air Force Reserve Officers Training Corps, as outlined in the various curricula:

AS 1-2. FIRST YEAR BASIC AIR SCIENCE.—This course introduces the student to the AFROTC Program and the Field of Aviation. The fundamentals of global geography are studied in relationship to international tensions and the resulting formation of security organizations. The course concludes with an analysis of the instruments of National Military Security. 4 s.h. (w) CAPTAIN CANFIELD

AS 51-52. SECOND YEAR BASIC AIR SCIENCE.—Stress is laid upon the elements and potentials of air power including targets, weapons, aircraft, air oceans, air bases, and Air Force operations. A survey is made of the careers open to personnel in the Air Force. 4 s.h. (w) CAPTAIN ENGLISH

ADVANCED COURSES

All students selected to continue in Air Science pursue:

AS 101-102. FIRST YEAR ADVANCED AIR SCIENCE.—The first semester is concerned with the Air Force commander and his staff; techniques of problem solving; communications processes and Air Force correspondence; instructing in the Air Force. The second half of the course deals with military law, courts and boards and applied air science including problems of modern flight, navigation, and weather. Attention is also given to the functions of an Air Force base. Prerequisites: AS 1-2 and 51-52 or equivalent. 8 s.h. (w) CAPTAIN KNOX

AS 201-202. SECOND YEAR ADVANCED AIR SCIENCE: The first semester includes career guidance, seminar studies in the principles of leadership and management in the Air Force and military aviation and the evolution of warfare. The second semester is concerned with the military aspects of world political geography and concludes with a briefing for commissioned service. Prerequisites: AS 1-2 and 51-2 or equivalent, and AS 101-102. 8 s.h. (w) MAJOR BARNHILL

BIOLOGY

See courses listed under Botany and Zoology.

BOTANY

PROFESSOR OOSTING, CHAIRMAN; PROFESSOR HUMM, DIRECTOR OF UNDERGRADUATE STUDIES; ASSISTANT PROFESSOR PHILPOTT, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS ANDERSON, BLOMQUIST, HARRAR, AND KRAMER; ASSOCIATE PROFESSORS BILLINGS, NAYLOR, AND PERRY; ASSISTANT PROFESSOR JOHNSON; DR. CULBERSON; AND ASSISTANTS

1. GENERAL BOTANY.—An introduction to the structure and life-processes of seed plants and the environmental factors influencing their distribution. Laboratory, discussions, and field trips. Three two-hour periods. 4 s.h. (w & e) STAFF

2. GENERAL BOTANY.—A survey of the plant kingdom with emphasis on reproduction and an introduction to identification. Three two-hour periods. Prerequisite: Botany 1. 4 s.h. (w & e) STAFF

51. CULTURE AND PROPAGATION OF PLANTS.—Experimental studies of the processes involved in growth, and the application of this knowledge to the selection, growth, and propagation of plants. Prerequisite: one year of botany. 4 s.h. (e) DR. CULBERSON

52. PLANT IDENTIFICATION.—Practice in the identification of local plants, especially flowering plants, and a study of the principles and rules underlying plant classification. Laboratory, lectures, and field trips. Prerequisite: one year of botany. 4 s.h. (w) PROFESSOR BLOMQUIST

53. ECOLOGY OF ECONOMIC PLANTS.—The principles of plant growth and distribution as applied to crop plants. Forest, grassland, and representative cultivated species will be considered in relation to environment. Prerequisite: one year of a natural science. 3 s.h. (e) PROFESSOR ANDERSON

55. ANATOMY AND MORPHOLOGY OF VASCULAR PLANTS.—A detailed study of the vegetative and reproductive tissues of seed plants; and a survey of the several groups of vascular plants emphasizing relationships of body structures and life histories. Prerequisite: one year of botany. 4 s.h. (e) ASSISTANT PROFESSOR PHILPOTT

101. PRINCIPLES OF HEREDITY.—The basic principles of heredity and their significance. Lectures, three hours; laboratory, two hours; conference (attendance optional), one hour. Laboratory work includes experimental breeding of the fruit fly. May be taken as a lecture course without laboratory. Prerequisite: one (high-school or college) course in biology, botany, or zoology. High-school or college algebra recommended. 3 or 4 s.h. (w) ASSOCIATE PROFESSOR PERRY

103. GENERAL BACTERIOLOGY.—A study of the morphology and fundamental physiological processes of bacteria; their relationship to sanitation, public health, soil fertility, and food preservation. Prerequisite: one year of botany or zoology, or equivalent. 4 s.h. (w) ASSOCIATE PROFESSOR HUMM

104. THE STRUCTURE AND IDENTIFICATION OF LOWER PLANTS.—A study of representative examples of algae, fungi, mosses and liverworts, including collection, identification, and classification of common forms. Offered in alternate years. Prerequisite: one year of botany. 4 s.h. (w) PROFESSOR ANDERSON

151. INTRODUCTORY PLANT PHYSIOLOGY.—The principal physiological processes of plants, including water relations, synthesis and use of foods, and growth phenomena. Prerequisite: Botany 1, 2 or equivalent; one year of chemistry recommended. 4 s.h. (w) PROFESSOR KRAMER

156. PLANT ECOLOGY.—The principal factors affecting plants and plant communities as they exist in different environments. Laboratory, lectures, and field trips. Prerequisites: Botany 1, 2 and 52, or equivalent. 4 s.h. (E) PROFESSOR BILLINGS

202. GENETICS.—The principles of heredity, their cytological basis, and their bearing on other fields of biology. Laboratory work involves experimental breeding of the fruit fly and interpretation of data from the breeding of plants. Offered in alternate years. Prerequisites: one year of botany or zoology, or equivalent, and college algebra. 4 s.h. (w) ASSOCIATE PROFESSOR PERRY

203. PLANT CYTOLOGY.—A study of the structure and organization of plant cells in relation to growth, reproduction and especially heredity. Offered in alternate years. Prerequisite: one year of botany. 4 s.h. (w) PROFESSOR ANDERSON

204. ADVANCED PLANT ANATOMY.—A study of vegetative and reproductive tissues of vascular plants including selection and preparation of fresh plant materials. An analysis of some of the significant literature bearing upon function, development and phylogeny. Prerequisite: Botany 55 or equivalent. 4 s.h. (E) ASSISTANT PROFESSOR PHILPOTT

216. BOTANICAL MICROTECHNIQUE.—Methods and theory in preparation of plant tissues for temporary mounts and permanent microscopical slides. Prerequisite: Two years of natural science. 4 s.h. (E) ASSISTANT PROFESSOR PHILPOTT

218. ILLUSTRATIVE TECHNIQUES.—A study of botanical illustrative methods, including theory and use of the microscope, microscopical measurements, drawing, photomicrography, botanical photography, darkroom procedure, lantern slides and the preparation of illustrative material for publication. Prerequisite: Two semesters of botany, zoology or forestry. 2 s.h. (w) PROFESSOR ANDERSON

221. INTRODUCTORY MYCOLOGY.—Field and laboratory study of the vegetative and reproductive structures of the fungi and slime molds. Methods of collection, isolation, propagation, and identification of the major orders as represented in the local flora. Prerequisite: One year of biological science. 4 s.h. (w) ASSISTANT PROFESSOR JOHNSON

225-226. SPECIAL PROBLEMS.—Students with adequate training may do special work in the following fields:

a. MYCOLOGY, AND PLANT PATHOLOGY. ASSISTANT PROFESSOR JOHNSON

b. CYTOLOGY. PROFESSOR ANDERSON

c. ECOLOGY. PROFESSOR OOSTING AND ASSOCIATE PROFESSOR BILLINGS

d. GENETICS. ASSOCIATE PROFESSOR PERRY

e. MORPHOLOGY AND ANATOMY OF HIGHER GROUPS.

ASSISTANT PROFESSOR PHILPOTT

f. MORPHOLOGY AND TAXONOMY OF LOWER GROUPS.

PROFESSORS BLUMQUIST AND ANDERSON; DR. CULBERSON

g. PHYSIOLOGY.

PROFESSOR KRAMER AND ASSOCIATE PROFESSOR NAYLOR

i. TAXONOMY OF HIGHER GROUPS.

PROFESSOR BLUMQUIST

j. SENIOR SEMINAR.—1 s.h. (w)

STAFF

m. MICROBIOLOGY.

ASSOCIATE PROFESSOR HUMM

252. PLANT METABOLISM.—The physicochemical processes and conditions underlying the physiological processes of plants. Prerequisite: Botany 151 or equivalent; organic chemistry recommended. 4 s.h. (E) ASSOCIATE PROFESSOR NAYLOR

254. PLANT WATER RELATIONS.—A study of factors affecting the availability of water, its absorption and use in plants, and the effects of water deficits on plant processes. Assigned readings, reports, and lectures. Prerequisite: Botany 151 or equivalent. 3 s.h. (w) PROFESSOR KRAMER

255. ADVANCED TAXONOMY.—A study of the historical background of plant taxonomy, modern concepts and systems of classification, nomenclatorial problems and the taxonomy of specialized groups. Prerequisite: two years of botany, including Botany 52 or equivalent. 4 s.h. (w) PROFESSOR BLOMQUIST

256. COMMUNITY ANALYSIS AND CLASSIFICATION.—The development of concepts and methods in synecology leading to present applications of theory and field techniques. Prerequisite: Botany 156 or equivalent. 3 s.h. (E) PROFESSOR OOSTING

257. PRINCIPLES OF PLANT DISTRIBUTION.—Interpretations of floristic and ecological plant geography of world vegetation. Prerequisite: Botany 156 or equivalent. 3 s.h. (E) ASSOCIATE PROFESSOR BILLINGS

258. PHYSIOLOGY OF GROWTH AND DEVELOPMENT.—Consideration of the internal factors and processes leading to the production of new protoplasm and its differentiation at the cellular, tissue, and organ level in plants. Prerequisite: Botany 151 or equivalent; organic chemistry recommended. 3 s.h. (E) ASSOCIATE PROFESSOR NAYLOR

259. ENVIRONMENTAL MEASUREMENTS.—Methods of obtaining and evaluating climatological data for ecological purposes with special attention to instrumentation and microclimate. Prerequisite: Botany 151 and 156 or equivalent. 3 s.h. (E) ASSOCIATE PROFESSOR BILLINGS

FOREST BOTANY

224. FOREST PATHOLOGY.—Infectious and non-infectious diseases of forest trees, and related deterioration of forest products. Field and laboratory study of symptoms, etiology, and control. Prerequisite: Botany 1 and 2. 3 s.h. (w) ASSISTANT PROFESSOR JOHNSON

253. DENDROLOGY.—Nomenclature, classification, and identification of woody plants with special reference to species indigenous to southeastern United States and other important forest regions of temperate North America. Laboratory and field work. Prerequisite: one year of botany. 3 s.h. (w) PROFESSOR HARRAR

DEPARTMENTAL MAJOR

Prerequisites: Botany 1 and 2.

Major Requirements: A minimum of 21 hours (B.S., 24 hours) of work including courses 52, 55, and 104. The remaining hours may be selected from any other courses in the Department for which the student is eligible, subject to the approval of the Departmental Adviser. All majors are expected to register for Senior Seminar for one semester of their senior year.

Related Work: Courses in at least two Natural Science Departments sufficient to total, with major work, 42 s.h. (B.S., 48 s.h.).

CHEMISTRY

PROFESSOR SAYLOR, CHAIRMAN; ASSISTANT PROFESSOR WILDER, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSOR HILL, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS BIGELOW, BRADSHAW, BROWN, CLOCKER (VISITING LECTURER), GROSS, HAUSER, HOBBS, AND VOSBURGH; ASSISTANT PROFESSORS KRIGBAUM, POIRIER AND STROBEL; DRs. CARPENTER, FERNANDEZ AND QUIN AND ASSISTANTS

1, 2. GENERAL INORGANIC CHEMISTRY.—Lectures and recitations on the elementary principles of chemistry and on the structure, properties, preparation

and uses of the elements and their compounds. The laboratory work includes qualitative analysis of some of the more common metals. One lecture, two recitations, and three laboratory hours, throughout the year. Chemistry I is a prerequisite for Chemistry 2. 8 s.h. (W & E)

PROFESSORS HILL, BRADSHER, AND BROWN; ASSISTANT PROFESSORS KRIGBAUM, STROBEL, AND WILDER; DRs. CARPENTER, FERNANDEZ, AND QUIN AND ASSISTANTS

42. INTRODUCTION TO CHEMICAL ANALYSIS.—A study of solutions of electrolytes with special reference to chemical equilibrium and chemical analysis. Laboratory experiments illustrate the principles of chemical equilibrium and the techniques of quantitative and semimicro qualitative analysis. Credit is not given for both 2 and 42 nor for both 42 and 61. One lecture, one recitation and six laboratory hours. Prerequisites: Permission of the Director of Undergraduate Studies, Chemistry I, and Mathematics 6; the latter may be taken concurrently. 4 s.h. (W)

ASSISTANT PROFESSORS WILDER AND STROBEL

NOTE: Two *mutually exclusive* chemistry sequences are provided on the freshman-sophomore level, (a) courses 1, 2 and 61 and (b) courses 1, 42, and 65. Courses 42 and 65 are open primarily to well-qualified B.S. science majors. Students interested in them should confer with the Director of Undergraduate Studies in Chemistry. Those selected for Chemistry 42 will ordinarily be expected to continue with 65.

61. FUNDAMENTALS OF ANALYTICAL CHEMISTRY.—A study of the reactions of electrolytes in solution and of chemical equilibrium illustrated by laboratory experiments involving the techniques of gravimetric, volumetric, and colorimetric analysis. One lecture, one recitation, and six laboratory hours. Prerequisites: Chemistry 1, 2 and Mathematics 6 or equivalent. 4 s.h. (W)

PROFESSORS SAYLOR AND VOSBURGH; ASSISTANT

PROFESSORS KRIGBAUM, POIRIER, STROBEL, AND WILDER; AND ASSISTANTS

65. INORGANIC CHEMISTRY.—A study of the more familiar elements and their compounds in the light of modern theories of valence and molecular structure. Three recitations a week. Prerequisite: Chemistry 42. 3 s.h. (W)

PROFESSORS VOSBURGH AND HILL

70. QUANTITATIVE ANALYSIS.—A study of the theory and techniques of inorganic gravimetric and volumetric analysis. One lecture, one recitation, and six laboratory hours. Prerequisite: Chemistry 42 or 61. 4 s.h. (W)

PROFESSORS SAYLOR AND VOSBURGH; ASSISTANT

PROFESSORS KRIGBAUM, POIRIER, STROBEL, AND WILDER; AND ASSISTANTS

131. ADVANCED QUANTITATIVE ANALYSIS.—A second course in the theory and technique of inorganic analysis with special reference to the analysis of complex materials. One lecture and six laboratory hours. Prerequisite: Chemistry 70. 3 s.h. (W)

PROFESSORS VOSBURGH AND SAYLOR AND ASSISTANTS

151, 152. ORGANIC CHEMISTRY.—An introduction to the study of the compounds of carbon in which the chemistry of aliphatic and aromatic compounds is considered. Laboratory experiments are selected to illustrate the more important reactions and preparations of organic compounds. Two lectures, one recitation, and three laboratory hours. Prerequisite: Chemistry 61 or 65. Chemistry 151 is prerequisite for 152. 8 s.h. (W)

PROFESSORS BIGELOW, BRADSHER, BROWN,

AND HAUSER; ASSISTANT PROFESSOR

WILDER; AND ASSISTANTS

206. ELEMENTS OF THEORETICAL CHEMISTRY.—A course in the general principles of physical chemistry for students who do not present credit in calculus. Credit is not given for both 206 and 261-262. Three recitation and three laboratory hours. Prerequisites: Chemistry 70, 151, 152, Physics, 8 s.h., and Mathematics, 6 s.h. With the permission of the Director of Graduate Studies, graduate students from other departments may offer other advanced science courses in lieu of some of these prerequisites. 4 s.h. (W)

PROFESSOR SAYLOR

215. ADVANCED INORGANIC CHEMISTRY.—A study of modern theories of valence and molecular structure and of inorganic compounds, particularly the less common types. Prerequisites: Chemistry 261-262 or 206. 3 s.h. (w)

PROFESSORS VOSBURGH AND HILL

216. NUCLEAR CHEMISTRY.—Types and elementary theory of nuclear reactions and the considerations involved in the use of tracers in chemical studies. Prerequisites: Chemistry 261-262; 262 may be taken concurrently. 2 s.h. (w)

PROFESSOR HILL

233. INSTRUMENTAL ANALYSIS.—A study of physical measuring instruments in chemical analysis with special attention to optical instruments. One lecture and three laboratory hours. Prerequisites: Chemistry 70 and one year of physics. 2 s.h. (w)

ASSISTANT PROFESSOR STROBEL

234. CHEMICAL INSTRUMENTATION.—Discussion of physicochemical principles as applied to instrumental methods of analysis, illustrated by laboratory experiments with emphasis on methods involving electrical techniques. One lecture and three laboratory hours. Prerequisites: Chemistry 70 and either 261-262 or 206; either of the latter may be taken concurrently. 2 s.h. (w)

ASSISTANT PROFESSOR STROBEL

251. QUALITATIVE ORGANIC ANALYSIS.—Systematic identification of organic compounds, including a study of solubilities and classification reactions. One lecture and six laboratory hours. With permission of the Director of Graduate Studies, graduate students may take three hours of laboratory work instead of six and receive 2 semester hours credit. Prerequisites: Chemistry 70, 151, 152. 3 s.h. (w)

PROFESSOR HAUSER

252. ADVANCED ORGANIC PREPARATIONS.—A laboratory course designed to supplement the student's knowledge of fundamental organic processes by a selected group of laboratory exercises accompanied by discussions of techniques and theories pertinent to the experiments. Five hours laboratory and lecture with lectures in alternate weeks. Prerequisite: Chemistry 70, 151, 152. 2 s.h. (w)

PROFESSOR BROWN

261-262. PHYSICAL CHEMISTRY.—Fundamentals of general theoretical chemistry illustrated by selected laboratory experiments. Three recitations and three laboratory hours. Prerequisites: Chemistry 70, 151, 152; Physics, 8 s.h.; and Mathematics 51, 52 or equivalent. 8 s.h. (w)

PROFESSOR HOBBS

271. INTRODUCTION TO RESEARCH.—Lectures on the use of chemical literature, research methods, recording and publication of results, and other topics. One lecture. 1 s.h. (w)

PROFESSOR BROWN

275-276. RESEARCH.—The aim of this course is to give instruction in methods used in the investigation of original problems. It is open to seniors by permission of the Director of Undergraduate Studies. Nine hours a week and conferences. 1 to 6 s.h. (w)

PROFESSORS BIGELOW, BRADSHAW, BROWN, GROSS, HAUSER,
HILL, HOBBS, SAYLOR, AND VOSBURGH; ASSISTANT
PROFESSORS KRIGBAUM, STROBEL, AND WILDER

DEPARTMENTAL MAJOR

A. For the degree of A.B.

Prerequisites: Chemistry 1, 2, Mathematics, 6 s.h.

Major Requirements: 22 s.h., including Chemistry 61, 70, 151, 152, and an additional 6 to 8 s.h., which may be satisfied by 261-262 or by 206 together with 2 or 3 s.h. selected from courses 131, 233, 234 and 251.

Related Work: 20 s.h., including Physics 8 s.h. with the remainder usually in Botany, Geology, Mathematics, Physics, or Zoology.

B. For the degree of B.S. beginning Fall, 1957.

Prerequisites: Chemistry 1, 2 or 1, 42, Mathematics 6 s.h.

Major Requirements: Chemistry 61 or 65, 70, 131, 151, 152, 251, 234 or 252, 261-262; also 271, if 65 is elected.

Related Work: 18 s.h., including Physics, 8 s.h., and Mathematics 50, 51, and 52.

The language requirements must be satisfied by German and either French or Russian.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

ECONOMICS AND BUSINESS ADMINISTRATION

PROFESSOR HOOVER, CHAIRMAN; ASSOCIATE PROFESSOR SAVILLE, ACTING DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSORS BLACK, DE VYVER, HANNA, HUMPHREY, JOERG, LONDON, RATCHFORD, SIMMONS, SMITH, AND SPENGLER; VISITING PROFESSOR THOMAS; ASSOCIATE PROFESSORS CARTTER, LEMERT, MCKENZIE, AND SHIELDS; ASSISTANT PROFESSORS BELL, DEWEY, AND DICKENS; VISITING ASSISTANT PROFESSOR STEWART; DR. KREPS; MESSRS. DIX, DUKES, GIBBONS, GOFFMAN, GOTTHEIL, HUNTLEY, PARTHEMOS, AND WILL

The courses offered by the Department are listed under three divisions, Economics, Accounting, and Business Administration.

In general, the Economics courses aim to develop in the student such critical and analytical skills as underlie the ability to understand economic problems and institutions, both in their contemporary and in their historical setting. While no particular vocational or professional goal is emphasized, these courses furnish the academic background necessary for many positions in industry, for work in the economic branches of government service, and for graduate study in economics and the social sciences.

Courses in Accounting and Business Administration, although more concerned with general principles than with specific applications, stress in greater measure than courses in Economics the knowledge and techniques useful to students definitely preparing for business careers. The student who majors in Accounting may elect courses in accountancy, business law, and related work, sufficient to qualify for admission to C.P.A. examinations.

Economics 51-52 must be passed by all students planning to elect further courses in Economics and Business Administration.

ECONOMICS

51-52. PRINCIPLES OF ECONOMICS.—6 s.h. (E & W)

STAFF

Sections of Economics 51 will be offered during the spring semester, and sections of Economics 52 will be offered during the fall semester.

103. TRANSPORTATION.—Essential features, problems, and competitive positions of rail, highway, air, and inland-water transportation, with most emphasis on rail transportation. Special attention is given to the economic significance of transportation, and to cost factors, rates and their economic effects and regulations. 3 s.h. (W)

PROFESSOR LONDON

132. THE ECONOMIC HISTORY OF THE UNITED STATES.—A study of the agricultural, industrial, commercial, and financial progress of the United States from colonial times to the present day. 3 s.h. (W)

ASSOCIATE PROFESSOR SAVILLE

149. INTERMEDIATE ECONOMICS.—This course develops methods of economic analysis beyond the principles level. Major emphasis is laid on the determination of price and distribution of income. These problems are studied in the context of both competitive and monopolistic market structures. 3 s.h. (W)

STAFF

150. ECONOMIC THOUGHT SINCE ADAM SMITH.—A course of readings in the leading economic writers of the 19th and 20th Centuries. There will be weekly individual conferences, and occasional essays. Prerequisite: Economics 149 and permission of the department. 3 s.h. (W)

ASSOCIATE PROFESSOR MCKENZIE; STAFF

152. GLOBAL GEOGRAPHY.—The subject matter involves resources patterns and world affairs, geonomic problems, geocultural problems, and geographic factors affecting geopolitical questions. 3 s.h. (E)

ASSOCIATE PROFESSOR LEMERT

153. MONEY, CREDIT AND BANKING.—This course begins with a study of the nature, characteristics, and functions of money, credit, and the commercial banking system. It covers also the history of commercial banking in the United States; the foundation, organization, and functions of the Federal Reserve System; the supervision and control of commercial banks; deposit insurance; and the value of money. 3 s.h. (w) PROFESSOR SIMMONS; PROFESSOR RATCHFORD; ASSOCIATE PROFESSOR SAVILLE; ASSISTANT PROFESSOR DEWEY

155. LABOR PROBLEMS.—An examination of present-day labor problems followed by an intensive study of methods used by employers and workers in meeting those problems. 3 s.h. (w) PROFESSOR DE VYVER; ASSOCIATE PROFESSOR CARTER

161. EUROPEAN ECONOMIC PROBLEMS.—This course deals with the losses and economic dislocations of the war, the problem of developing a new pattern of intra-European and world trade, the effort to stabilize prices, expand investments and production, and the effect of economic planning and controls. 3 s.h. (w) PROFESSOR HUMPHREY

169. ECONOMICS OF CONSUMPTION.—Economic problems of the family. Factors determining choice; commercial and legal standards for consumer's goods; consumer credit and co-operation; income and standards of living. 3 s.h. (w) ASSOCIATE PROFESSOR SAVILLE

186. LATIN-AMERICAN ECONOMICS.—Facts and factors in the economic structure and growth of the Latin-American nations; population, labor productivity, and standards of living; problems of industry, agriculture, and mining; transportation and public utilities; monetary and fiscal policies; the migration of capital; economic thought and institutions. 3 s.h. (w) PROFESSOR SMITH

187. PUBLIC FINANCE.—This is a general course in the principles of public finance. It covers the constitutional, economic, and administrative aspects of public revenues, public expenditures, public debts, and intergovernmental fiscal relations. Special attention is given to current trends and problems. 3 s.h. (w) PROFESSOR RATCHFORD

189. BUSINESS AND GOVERNMENT.—An examination of the public policies which most directly affect the operation of competition in the business world. The course considers the leading philosophies of public control and economic development, the validity of their presuppositions, and their influence on legislation, court decisions, and administrative law. 3 s.h. (w) ASSISTANT PROFESSOR DEWEY

193. ECONOMIC SYSTEMS.—A study of alternative economic systems. An historical and analytical study of the basic elements of capitalism and of collectivist types of economic systems. Particular attention is given to an analysis of the economic system of Soviet Russia. Credit for this course will be given only if the student takes Economics 194. Prerequisite: permission of the department. 3 s.h. (w) [Not offered in 1957-58.] PROFESSOR HOOVER

194. ECONOMIC FUNCTIONS OF THE STATE.—A continuation of Economics 193. A consideration of the economic functions of society and of the contrasting roles of the state in the various economic systems in carrying on these functions. The Nazi system, the quasosocialized economics of Europe, as well as the modifications of old-style capitalism in the United States are analyzed. Prerequisite: Economics 193. 3 s.h. (w) PROFESSOR HOOVER

[Not offered in 1957-58.]

201. SENIOR SEMINAR IN ECONOMICS.—Problems in theory and applied economics. Readings, reports, and discussion of selected topics. For majors in Economics, with consent of the Department. 3 s.h. (w) STAFF

217. POPULATION PROBLEMS AND RESOURCES.—Survey of population theory and policy. Study of national and international trends in population—growth and resource-use, together with analyses of their economic and social implications. 3 s.h. (w) PROFESSOR SPENGLER

218. BUSINESS CYCLES.—A study of the various types of cyclical movements in industry, with special emphasis on cycle theory and methods of controlling or modifying business cycles. 3 s.h. (w) PROFESSOR HUMPHREY

219. ECONOMIC PROBLEMS OF UNDER-DEVELOPED AREAS.—Consideration and analysis of the economic and related problems of under-developed countries. Some attention will be given to national and international programs designed to accelerate the solution of these problems. 3 s.h. (w) PROFESSOR SPENGLER

231. ECONOMIC HISTORY OF EUROPE.—The economic development of Europe from medieval times to the present, treating such topics as the guilds, mercantilism, money, banking, crises, the Industrial Revolution, the interrelationships of government and business, and the economic consequences of war. 3 s.h. (w) PROFESSOR SMITH

232-238. STATISTICAL METHODS.—A study of statistical methods appropriate for dealing with problems in business and the social sciences. In addition to developing more thoroughly the subjects considered in *Business Statistics*, the following methods will be considered: simple, multiple, partial, and curvilinear correlation; curve fitting; probability; sampling distributions; and statistical inference. Prerequisite: Economics 138 or consent of the instructor. Either semester may be taken for credit. 6 s.h. (w) PROFESSOR HANNA

240. NATIONAL INCOME.—A critical survey of the conceptual framework and structure of national income and its components, the reliability of national income estimates, and their use in analyzing questions of economic policy. 3 s.h. (w) PROFESSOR HANNA

243. MATHEMATICAL ECONOMICS.—A systematic survey of mathematical economic theory. The principal topics are conditions of static equilibrium, including stability conditions, dynamic models using difference equations, and linear production models of input-output analysis and activity analysis. 3 s.h. (w) ASSOCIATE PROFESSOR MCKENZIE

244. INTRODUCTION TO ECONOMETRICS.—The theory of statistical model building in economics. The identifiability of parameters in a system of linear difference equations. The statistical estimation of parameters. The design of dynamic economic models. 3 s.h. (w) ASSOCIATE PROFESSOR MCKENZIE

256. LABOR LEGISLATION AND SOCIAL INSURANCE.—A study of the relations of the state to labor problems with special reference to remedial legislation, to interference in labor disputes, and to social insurance. Prerequisite: Economics 155 or with the consent of the instructor. 3 s.h. (w) PROFESSOR DE VYVER

257. DYNAMICS OF THE LABOR MOVEMENT.—A study of the forces which have shaped the growth of the labor movement. Special emphasis on the origin of modern trade unionism, relating its growth with western philosophic developments, and with the changing economic and social structure of society in Europe and America. 3 s.h. (w) ASSOCIATE PROFESSOR CARTER

262. TRADE UNIONISM AND COLLECTIVE BARGAINING.—An intensive survey of the trade union as an economic institution is followed by a study of the principles and problems of union-management relationship as found in collective bargaining. Prerequisite: Economics 155 or equivalent. 3 s.h. (w) PROFESSOR DE VYVER

265. INTERNATIONAL TRADE AND FINANCE.—A study of the fundamental principles of international trade and foreign exchange. Subjects covered will include international specialization, balance of payments, foreign investments, tariffs and commercial policies, exchange control, exchange rates, and international monetary problems. 3 s.h. (w) PROFESSOR HUMPHREY

268. COMPETITIVE VERSUS MONOPOLISTIC ENTERPRISE.—A study of monopoly and imperfect competition as disturbances of a free, self-regulating market economy in an individualistic democratic political system; of the possibilities of public and private action respecting the preservation of these systems; and of the implications of planning and public welfare policies. 3 s.h. (w) ASSISTANT PROFESSOR DEWEY

ACCOUNTING

57-58. PRINCIPLES OF ACCOUNTING.—Principles of single proprietorship, partnership, and corporate accounting. Designed to give the student some insight into accounting techniques and an understanding of financial statements, their preparation and interpretation. Supervised laboratory attendance optional. 6 s.h. (w) STAFF

60. GENERAL ACCOUNTING.—A one semester course in accounting principles designed for economics majors and other non-business administration students who desire some understanding of basic accounting concepts. This course must be taken in the sophomore or junior year. Students may not receive credit for both Course 60 and Course 57-58. 3 s.h. (w) ASSISTANT PROFESSOR DICKENS; PROFESSOR DE VYVER

147. ACCOUNTING FOR CONTROL.—This course traces the ways and means of executive control through statistics and industrial accounting. Emphasis is placed upon controlling business enterprises through cost accounting, financial reports, and other techniques. This course is not open to accounting majors. Prerequisite: Economics 57-58. 3 s.h. (w) PROFESSOR BLACK

171-172. ADVANCED ACCOUNTING.—Advanced accounting theory and practice applied to the managerial problems of valuation and operation in corporations, consolidations, mergers, and liquidations. Open to students who have completed Economics 57-58. 6 s.h. (w) ASSOCIATE PROFESSOR SHIELDS

173-174. AUDITING, THEORY AND PRACTICE.—This course is primarily concerned with preparing the student to enter public accounting practice, but some attention is given to internal auditing. During the first semester, auditing techniques and methods are studied through the use of an audit practice set. The work of the second semester deals with matters of auditing and accounting policy examined from the standpoints of the supervising accountant, the business manager, and the investor. Prerequisite: Economics 171-172 and the permission of the department. 6 s.h. (w) ASSISTANT PROFESSOR DICKENS

175-176. C.P.A. REVIEW.—Thorough practice in classroom to prepare candidates for the Certified Public Accountant examination. The object is to train students to apply accounting principles and to work in classroom under substantially the same conditions as in the examination room. Practical accounting problems, auditing analysis and theory of accounts. Prerequisite: Economics 171-172 and permission of the department. 6 s.h. (w) PROFESSOR BLACK

Those who do not wish credit may take Economics 175-176 for \$25.00 per semester.

177. INCOME TAX ACCOUNTING.—A study of the accounting principles involved in the management of business enterprise under the requirements of Federal income tax laws. Practice is given in the preparation of tax returns. Prerequisite: Economics 171-172 or permission of the instructor. 3 s.h. (w) ASSOCIATE PROFESSOR SHIELDS

178. ACCOUNTING SYSTEMS.—A presentation of the design and use of basic accounting procedures as applied to specialized business needs. Field trips to selected business units will be arranged. Prerequisite: Economics 171-172 and the permission of the department. 3 s.h. (w) ASSISTANT PROFESSOR DICKENS
[Not offered in 1957-58.]

180. GOVERNMENT ACCOUNTING.—Accounting principles and methods used in the control and administration of governmental units. Emphasis is placed upon state, county, and municipal governments. Prerequisite: Economics 57-58 and permission of the instructor. 3 s.h. (w) ASSOCIATE PROFESSOR SHIELDS

275-276. ADVANCED INDUSTRIAL ACCOUNTING AND MANAGEMENT.—A comprehensive examination of the rationale and techniques of control methods used in industry. Emphasis is laid on a critical evaluation of the practices followed by job-order, process, and standard costing as well as the economics of overhead costs. Prerequisites: Economics 171-172 and permission of the Department. 6 s.h. (w) PROFESSOR BLACK

BUSINESS ADMINISTRATION

11. ECONOMIC GEOGRAPHY.—A course in regional economic geography embracing the study of the world's major geographic regions, their present and potential production of food and raw materials for manufacture, and the relationship between these factors and the development of manufacturing industries, cities, and commerce. Offered both semesters. 3 s.h. (E & W) ASSOCIATE PROFESSOR LEMERT

105. INDUSTRIAL MANAGEMENT.—This course deals primarily with the elements and problems of managing the operations of an industrial firm. Topics treated include the functions and responsibilities of management, qualities required in executives, organization, location, the physical plant, materials control, the planning and control of operations, industrial and market research, personnel, budgeting, purchasing, and records and reports. Offered both semesters. 3 s.h. (W)

PROFESSOR LONDON; PROFESSOR JOERG;
ASSISTANT PROFESSOR BELL

109. THE ECONOMIC GEOGRAPHY OF LATIN AMERICA.—This course involves comprehensive study of the resources and people of Mexico, the West Indies, and Central and South America. Special emphasis is placed upon the possibilities and limitations of increases in trade between the United States and the leading Latin-American countries. Prerequisite: Economics 51-52 or permission of the department. 3 s.h. (E)

ASSOCIATE PROFESSOR LEMERT

115. FUNDAMENTALS OF GEOGRAPHY.—A study of geographic influences consisting of location, maps and their interpretation, climate, topography, soils, minerals, bodies of water, plants, animals, and the works of man. This course is required of all students in the Elementary School Teaching program, and is also recommended for those intending to specialize in foreign trade or the diplomatic service. Prerequisite: Economics 51-52 or permission of the department. 3 s.h. (E)

ASSOCIATE PROFESSOR LEMERT

120. ECONOMIC GEOGRAPHY OF THE PACIFIC.—The physical influences, natural resources, and economic activities of Asia, Oceania, and portions of the western coasts of North and South America with special emphasis upon their relationship to present developments. Prerequisite: Economics 51-52 or permission of the department. 3 s.h. (E)

ASSOCIATE PROFESSOR LEMERT; PROFESSOR TUTHILL

138. BUSINESS STATISTICS.—A survey of the principal statistical methods and their application to economics and business administration. The course deals with collection of statistical data, construction of statistical tables and charts, and a brief study of the fundamental statistical concepts and techniques. Offered both semesters. 3 s.h. (W)

PROFESSOR HANNA; ASSOCIATE PROFESSOR SAVILLE; MR. HUNTLEY

Open to juniors and to sophomores in the second semester. Not open to seniors except with the permission of the Director of Undergraduate Studies.

143. CORPORATION FINANCE.—Principles and problems in the financial organization of corporations; the study of corporate securities, the management of capital, the distribution of earnings; industrial combinations; insolvency and reorganization. Prerequisite: Economics 57-58, Principles of Accounting, or Economics 60, General Accounting. Offered both semesters. 3 s.h. (W)

PROFESSOR JOERG, PROFESSOR RATCHFORD;
ASSISTANT PROFESSOR BELL

144. INVESTMENTS.—A study of the investment policies of individuals and institutions; the securities markets; sources of investment information and data; the analysis and interpretation of financial statements. Prerequisites: Economics 57-58 or 60, and 143. 3 s.h. (W)

PROFESSOR JOERG

158. INSURANCE.—The development and basic principles of insurance. This course covers such topics as business uses, policy contracts, costs, and regulation of insurance. Life and fire insurance are emphasized. 3 s.h. (W)

ASSOCIATE PROFESSOR SAVILLE

168. **MARKETING.**—The topics covered in this course include the economic importance of markets and the marketing system; marketing functions; organization, and methods, price policies; finance; speculation; market research and the planning of marketing activities; co-operative marketing; criticism of marketing and means for improvement; and regulation. 3 s.h. (w)
PROFESSOR LANDON

181. **BUSINESS LAW.**—The fundamental principles of law as applied to routine business transactions. The topics presented are: contracts, negotiable instruments, forms of business organizations. 3 s.h. (w)
ASSISTANT PROFESSOR BELL;
MR. GIBBONS, MR. DUKES

182. **BUSINESS LAW.**—A continuation of 181. The topics presented are: agency, bailments, sales, and related principles. 3 s.h. (w)
ASSISTANT PROFESSOR BELL; MR. GIBBONS

184. **COMMERCIAL LAW FOR ACCOUNTANTS.**—A review and summation of commercial law principles as they apply to accounting theory and practice. Emphasis will be placed upon the commercial law sections of the Certified Public Accountant examinations. Students are admitted to the course by permission of the instructor. *For seniors.* 3 s.h. (w)
PROFESSOR BLACK

188. **PERSONNEL MANAGEMENT.**—A study of the fundamental principles and problems of labor management and of collective bargaining under modern industrial conditions and under existing labor legislation. 3 s.h. (w)
PROFESSOR DE VYVER

191. **BUSINESS POLICY.**—An integrating course, where through analysis of a series of case problems from the top management viewpoint, the student is given practice in arriving at effective courses of action to solve business problems. To complete this course satisfactorily the student will be required to draw upon the institutional knowledge and techniques acquired in the other courses in the Department. Prerequisites: Business Administration requirements through the junior year. 3 s.h. (w)
STAFF

DEPARTMENTAL MAJORS

1. ECONOMICS

A. *Prerequisites:*

1. Students are urged although not required to take Mathematics 5 as partial fulfillment of the Minimum Uniform Requirements in the Natural Sciences and Mathematics.
2. Economics 51-52.

B. *Number of hours needed:* 24 hours in addition to Economics 51-52.

1. Required courses—Economics 149
Economics 153
2. Electives—18 semester hours of work in Economics (not Accounting or Business Administration) of which 9 semester hours shall be advanced courses in the Department.

C. *Related Work:*

1. Number of hours needed: 18 hours.
2. Required courses: one of the following—

Economics 57-58	Principles of Accounting
Economics 60	General Accounting
Economics 138	Business Statistics
3. Departments in which related work is usually taken:
Mathematics, Psychology, the social sciences and Business Administration
In special cases courses taken in other departments may be counted as related work with the approval of the department and the dean.

2. ACCOUNTING

The complete program of study listed under the heading Accounting on page 96 of this *Bulletin* must be completed for the Accounting Major.

3. BUSINESS ADMINISTRATION

The complete program of study listed under the heading Business on page 96 of this *Bulletin* must be completed for the Business Administration Major.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

EDUCATION

PROFESSOR CARTWRIGHT, CHAIRMAN; PROFESSOR CARR, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSORS BOLMEIER AND HURLBURT; ASSOCIATE PROFESSORS EASLEY, MCLENDON, PETTY, RUDISILL, STUMPF, AND WEITZ; ASSISTANT PROFESSORS COLVER, GEHMAN, AND REYNOLDS; ASSOCIATE PROFESSOR INGLES, DIRECTOR OF NURSING EDUCATION; PROFESSORS CLARK AND JACOBANSKY, AND ASSISTANT PROFESSORS BROCKER, GOLDSMITH, AND MOSES

Courses in the Department of Education are designed for two groups of students: (1) students with teaching experience or others who have definitely chosen teaching as their life-work, and (2) students who desire to study the school as an outstanding social institution. The courses listed in Nursing Education are for students preparing to teach in schools of nursing.

Students who do not expect to teach but merely desire an understanding of the school as part of a liberal education are advised to elect such courses as 84 and 88 for their introductory work in the Department and then to elect further work in accordance with their special interests. Students who expect to teach in the public schools should plan their courses in accordance with the general regulations set forth under Teaching on page 97 of this catalogue. *All prospective teachers must enroll in courses 84 and 88, preferably beginning before their junior year. They are then required to complete courses 103, 118, and 101-102 or 215-216 in their senior year.*

1. ORIENTATION IN STUDY AND STUDY HABITS.—A course for freshmen whose high-school and other records indicate the need for help in working out satisfactory study methods and in adjusting to college life. Note-taking from reading and lectures, time planning, remedial reading, and pertinent principles of the psychology of learning are among the matters considered. *Either semester. 3 s.h.* (w)

[Not offered in 1957-58.]

5. DEVELOPMENTAL READING.—A course consisting of study and practice for the improvement of the reading and study skills. Work is provided in such areas as vocabulary, speed of comprehension, critical interpretation, organization of ideas, and versatility of method in reading for different purposes. 3 s.h. (w)

ASSOCIATE PROFESSOR RUDISILL

84. SOCIAL FOUNDATIONS OF EDUCATION.—This course is the first of four intended to give the student a thorough survey of the place and function of education and an understanding of the school as a social institution. It is an introductory course emphasizing those historical, philosophical, and sociological factors which explain trends in American education. *Either semester. 3 s.h. (w & e)*

PROFESSORS CARTWRIGHT; ASSOCIATE PROFESSORS STUMPF AND MCLENDON

NOTE: Courses 84, 88, 103, and 118 constitute a sequence of 12 hours in Education required of all prospective teachers. Students who intend to teach in the elementary school should confer with Professors Carr or Petty and students who intend to teach in the secondary school should confer with Professors Hurlburt, McLendon or Reynolds in order to work this sequence into their schedules. See courses under Nursing Education for modified sequence of courses for students preparing to teach in schools of nursing.

88. EDUCATIONAL PSYCHOLOGY: LEARNING AND MEASUREMENT.—This course and Education 118 constitute a general introduction to the field of Educational Psychology. This course deals with (1) the psychology of learning,

including: the nature of the learning process; general principles or laws of learning; the course of learning and forgetting; factors influencing efficiency in learning and retention; and the transfer of training; and (2) measurement, including: the basic concepts in the measurement of intelligence; standardized achievement tests; the extent and significance of individual differences in ability and performance. Opportunity will be afforded for examination and study of a variety of tests of intelligence and achievement. *Either semester.* 3 s.h. (E)

ASSOCIATE PROFESSORS EASLEY AND RUDISILL;
ASSISTANT PROFESSOR GEHMAN

See note following course 84.

101-102. ELEMENTARY EDUCATION: PRINCIPLES AND PRACTICE.—The study of the nature, subject matter, and methods of elementary education. The course is designed to give prospective elementary teachers an understanding of basic principles and practices in the organization of instruction and of subject matter for the primary and grammar grades of the public school. Students may elect primary or grammar-grade work, according to their special interests. The specific problems which arise in the student teachers' experiences are treated in group and individual conferences. *For seniors only.* 9 s.h. (E)

PROFESSOR CARR; ASSOCIATE PROFESSOR PETTY

NOTE: Education 101-102, 103, and 118 constitute a semester's work during the senior year.

103. ORGANIZATION AND MANAGEMENT OF THE SCHOOL.—An introduction to the problems of school organization and administration which are of particular concern to the classroom teacher. Although federal and state control over education is briefly reviewed, the main consideration is the local school system. Considerable attention is given to the administration of teaching personnel, pupil personnel, and the program of studies. *Either semester.* 3 s.h. (E)

PROFESSOR BOLMEIER; ASSOCIATE PROFESSOR STUMPF

See notes following course 84, 101-102, 215-216.

118. EDUCATIONAL PSYCHOLOGY: PSYCHOLOGICAL DEVELOPMENT.—This course traces the psychological development of the individual from infancy to maturity. The principal topics considered are: the interdependence of hereditary and environmental factors in development, the nature of the development process, the establishment of the early basic patterns of behavior, changes and conditions producing these changes throughout childhood and adolescence to maturity, and the origin and treatment of minor behavior disorders. Not open to students who have had Psychology 121 or 126. Prerequisite: three semester hours in psychology or educational psychology. *Either semester.* 3 s.h. (E)

ASSOCIATE PROFESSOR EASLEY; ASSISTANT PROFESSOR GEHMAN

See notes following course 84, 101-102, 215-216.

142. CHILDREN'S LITERATURE.—Students enrolled will be allowed to specialize in literature of either the primary or the grammar grades. 3 s.h. (E)

PROFESSOR CARR; ASSOCIATE PROFESSOR RUDISILL

161. INTEGRATED ART IN THE PUBLIC SCHOOL.—Work in materials and methods as applied in two dimensional art. (Required of all students intending to teach in the elementary school.) 3 s.h. (E)

MR. STARS

162. PLASTIC ART IN THE PUBLIC SCHOOL.—Work in basic three dimensional art, giving an understanding of different sculptural media with special emphasis on ceramics. The course is designed for students in elementary and secondary art education, and will provide credit toward the North Carolina Elementary and Secondary Teaching Certificates. 3 s.h. (E)

MR. STARS

164. VOCAL MUSIC IN THE PUBLIC SCHOOL.—Materials and methods of teaching vocal music in the junior and senior high schools; emphasis on organization, administration, and performance of school choirs and ensembles; care of the changing voice. 3 s.h. (E)

ASSISTANT PROFESSOR SAVILLE

166. INSTRUMENTAL MUSIC IN THE PUBLIC SCHOOL.—Materials and methods of teaching instrumental music in the junior and senior high schools; emphasis on teaching technics, repertoire, organization, and administration of the instrumental curriculum. 3 s.h. (E)

ASSOCIATE PROFESSOR BONE

201. TEACHING AND SUPERVISION OF ARITHMETIC.—Special attention is given to the number system, the fundamental operations (with whole numbers, fractions, and decimals), percentage, and measurements. Considered also are the meaning theory, methods of teaching, problem solving, evaluation, practice and drill, and selection and gradation of arithmetical contents. This course is designed for teachers and supervisors in the elementary school. 3 s.h. (E)

ASSOCIATE PROFESSOR PETTY

203. PRINCIPLES OF SCHOOL ADMINISTRATION.—The fundamental facts and procedures of school administration, an analysis of the problems and policies of the organization and direction of a local school system and the functions of the various school officials. Prerequisite: six semester hours in education. 3 s.h. (E)

PROFESSORS BOLMEIER AND HURLBURT;

ASSOCIATE PROFESSOR STUMPF

215-216. SECONDARY EDUCATION: PRINCIPLES AND INTERNSHIP.—A one-semester course, the first half of which is devoted to an intensive study of principles, curriculum, and methods in secondary education. The second half consists of supervised internship in public junior or senior high schools. Students carrying this course for credit toward a master's degree will be required to take six hours of senior or graduate work in addition to the normal degree requirements. *Either semester.* 9 s.h. (E)

PROFESSORS CARTWRIGHT AND HURLBURT;

ASSOCIATE PROFESSOR MCLENDON;

ASSISTANT PROFESSOR REYNOLDS

Note: Education 215-216, 103, and 118 constitute a semester's work during the senior year.

224. TEACHING THE SOCIAL STUDIES IN ELEMENTARY SCHOOLS.—This course treats objectives, curriculum trends, methods, and materials in elementary-school social studies. Topics receiving emphasis include unit-planning, use of textbook, the reading program, the using of community resources, audio-visual materials, dealing with controversial issues, teaching time and place concepts, and evolution. Opportunity is provided for teachers to work on their own school problems in the social studies. 3 s.h. (E)

PROFESSOR CARTWRIGHT

225. THE TEACHING OF HISTORY AND THE SOCIAL STUDIES.—Evaluation of the objectives, content, materials, and methods in the teaching of History and the Social Studies. 3 s.h. (E)

PROFESSOR CARTWRIGHT

226. TEACHING READING IN THE ELEMENTARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to developmental and remedial programs. Practice is provided with elementary-school children suffering reading retardation, in testing, diagnosis, and daily remedial teaching. 3 s.h. (E)

ASSOCIATE PROFESSOR RUDISILL

228. IMPROVEMENT OF INSTRUCTION IN THE SOCIAL STUDIES.—An advanced treatment of curriculum, methods, and materials in the social studies. Individuals will concentrate on subjects and grade levels of their choice. 3 s.h. (E)

ASSOCIATE PROFESSOR MCLENDON

232. SUPERVISION OF INSTRUCTION.—A survey of supervision as a means of improving instructing and adapting the curriculum to the learner and to community needs. 3 s.h. (E)

PROFESSOR CARR; ASSOCIATE PROFESSOR MCLENDON

234. SECONDARY-SCHOOL ORGANIZATION AND ADMINISTRATION.—This course is designed especially for principals, teachers, and other prospective members of the secondary-school staff. The scope of secondary education is considered to encompass junior high school, regular high school, senior high, and junior college. Special treatment is given to the problems of internal organization and management. 3 s.h. (E)

PROFESSOR BELMEIER

236. TEACHING READING IN THE SECONDARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to develop-

mental and remedial programs. Practice is provided with secondary-school children suffering reading retardation, in testing, diagnosis, and daily remedial teaching. For secondary-school teachers of all subjects who wish to improve the reading and study habits of their students. 3 s.h. (E) ASSOCIATE PROFESSOR RUDISILL

239. METHODS AND PROBLEMS OF TEACHING ENGLISH IN SECONDARY SCHOOLS.—This course will present sound methods of teaching the reading of literature and other forms of writing, language, grammar and composition. Materials will include selections found in widely adopted textbooks, numerous specimen themes for grading, and current books and articles in the field. Several short compositions and a report will be required. 3 s.h. (E)

ASSOCIATE PROFESSOR BOWMAN

240. EDUCATIONAL AND OCCUPATIONAL INFORMATION.—A study of the sources of occupational and educational information: methods of securing and organizing occupational information; methods of providing vocational and educational information to students through career days, college conferences, class activities, and individual counseling; methods of making job analyses and community occupational surveys. 3 s.h. (w)

ASSISTANT PROFESSOR COLVER

241. PRINCIPLES OF GUIDANCE.—An historical survey of the philosophies of guidance; a study of the interrelationships between instruction, administration, and guidance in education. Prerequisite: 6 hours of psychology or educational psychology. 3 s.h. (w)

ASSISTANT PROFESSOR COLVER

246. THE TEACHING OF MATHEMATICS.—This course deals with such topics as aims, curriculum, course and lesson planning, and classroom procedure for teaching secondary-school mathematics. 3 s.h. (E)

ASSISTANT PROFESSOR REYNOLDS

253. SCHOOL LAW.—The primary purpose of this course is to familiarize prospective school administrators and teachers with the legal features of school organization and administration. Although some attention is given to constitutional and statutory provisions, the main emphasis is upon court decisions relating to education. Students are expected to select appropriate problems in school law for intensive study. 3 s.h. (E)

PROFESSOR BOLMEIER

258. EDUCATIONAL MEASUREMENTS.—A critical study of the principles and techniques involved in measurement in education with opportunity for individual research. Prerequisite: 12 semester hours in the Department, including a course in educational psychology. 3 s.h. (E)

ASSOCIATE PROFESSOR WEITZ

266. SCIENCE IN THE ELEMENTARY SCHOOL.—Presentation of basic concepts in natural and physical science through selected readings, the use of simple experiments and demonstrations, construction and use of equipment, and field studies. 3 s.h. (E)

ASSISTANT PROFESSOR REYNOLDS

276. THE TEACHING OF HIGH-SCHOOL SCIENCE.—Discussion, lectures and collateral reading, related to such topics as aims, tests, curriculum, classroom and laboratory procedure, field trips, course and lesson planning for secondary-school science. 3 s.h. (E)

ASSISTANT PROFESSOR REYNOLDS

290. ADMINISTRATION OF SCHOOL PROPERTY.—Planning and management of the school plant and its equipment to meet instructional, health, and community needs for immediate and long-range purposes. This course is intended for teachers and principals as well as for superintendents. Areas to be treated include site selection; trends in design, lighting, ventilation and heating; custodial service and maintenance; and financing. 3 s.h. (E)

ASSOCIATE PROFESSOR STUMPF

[Not offered in 1957-58.]

NURSING EDUCATION

101N. THE CURRICULUM IN THE SCHOOL OF NURSING.—The general principles of curriculum making and the factors which determine the content and organization of the nursing school curriculum are considered in this course. 3 s.h. (w)

ASSOCIATE PROFESSOR INGLES; ASSISTANT PROFESSOR MOSES

115N-116N. NURSING EDUCATION: PRINCIPLES AND PRACTICE.—A special section of Education 115-116. Principles of teaching applied to the nursing school situations and the planning and evaluation of instruction. Ninety hours of observation and of supervised teaching in the Duke University School of Nursing are required. Four hours of conference, observation, and practice teaching are required each week. Before beginning practice teaching students must complete thirty hours of observation. 8 s.h. (w) PROFESSOR JACOBANSKY

117N. COMMUNITY NURSING SERVICE.—Designed for administrators, teachers, and supervisors in schools of nursing. Emphasis is on the integration of out-patient departments and community social and health agencies into the nursing school curriculum and on the preparation of nurses for community service. 3 s.h. (w) ASSISTANT PROFESSOR BROCKER

120N. NURSING EDUCATION: PROBLEMS IN NURSING CARE.—Each student works on an individual problem designed to improve the nursing care of patients. 3 s.h. (w) ASSOCIATE PROFESSOR INGLES; ASSISTANT PROFESSOR GOLDSMITH
[Not offered in 1957-58.]

130N. PSYCHOSOMATIC NURSING.—A study of the close relationship between mind and body in all illness, and of the techniques of observation and interview, both experimental and therapeutic. Lectures, clinics, conferences, discussions and experience with patients. 4 s.h. (w) ASSISTANT PROFESSOR GOLDSMITH
[Not offered in 1957-58.]

131N-132N. PSYCHIATRY AND PSYCHIATRIC NURSING.—An advanced study with special emphasis on personality development and the preventive and therapeutic aspects of psychiatry and psychiatric nursing. In the second semester the management of practical situations of increasing complexity is stressed. Lectures, clinics, conferences, discussions and experience with patients. 8 s.h. (w) ASSISTANT PROFESSOR GOLDSMITH
[Not offered in 1957-58.]

133N. SEMINAR IN PSYCHIATRIC NURSING.—Special study of areas such as behavior problems of children, projective tests, group therapy, mental hygiene clinics, etc. 3 s.h. (w) ASSISTANT PROFESSOR GOLDSMITH
[Not offered in 1957-58.]

134N-135N. ADVANCED MEDICAL AND SURGICAL NURSING.—A study of the medical and surgical aspects of selected diseases, aimed at giving the student a better comprehension of the total care necessary to bring about the best possible results for patients. Lectures, discussions, case histories, and planned observation and experience with patients. 8 s.h. (w) ASSOCIATE PROFESSOR INGLES; ASSISTANT PROFESSOR MOSES

136N. SEMINAR IN MEDICAL OR SURGICAL SPECIALTY.—Directed study in a selected medical or surgical specialty. Each student works on a problem of major interest to her. Individual research in the collection of original material. 3 s.h. (w) ASSOCIATE PROFESSOR INGLES

160N. SOCIAL FOUNDATIONS OF NURSING EDUCATION.—A survey of major historical, philosophical, and sociological factors which have affected developments in nursing and nursing education. The purpose of the course is to give the student a better understanding of the place of nursing in present day society and the responsibilities of the individual nurse toward that society. 3 s.h. (w) PROFESSOR JACOBANSKY

193N. WARD ADMINISTRATION AND TEACHING.—This course is designed to help head nurses better to understand their functions in planning and managing a program on a hospital division which will result in improved care of patients, greater satisfaction for professional and non-professional personnel, and a more adequate teaching program for students and others. 3 s.h. (w)

PROFESSOR CLARK; ASSOCIATE PROFESSOR INGLES

195N. PERSONNEL WORK IN SCHOOLS OF NURSING.—The primary purpose of this course is to help head nurses and supervisors to develop greater understanding of the principles of human behavior and greater ability to apply these

principles in working with patients and others on hospital divisions, and in establishing cooperative relationships with other departments of the hospital. 3 s.h. (w)
 PROFESSOR JACOBANSKY

DEPARTMENTAL MAJOR

Major Requirements: 1. Number of hours needed: 24 hours in the Department.
 2. Required courses: 84, 88, 103, 118; and for elementary teachers, 101-102; for secondary teachers, 215-216.

Related Work: Sufficient work in subjects to be taught to meet certification requirements in state in which student intends to teach.

MATERIALS AND METHODS COURSES

Certain courses concerned with materials and methods in teaching the various subjects in the public school curriculum are listed in the proper subject matter department. These courses are intended to give credit on teaching certificates and are recommended by the Department of Education for such credit.

SCIENCE EDUCATION MAJOR

Students desiring to teach science in secondary schools should read the description of this program on page 97.

ENGLISH

PROFESSOR WARD, CHAIRMAN; PROFESSOR BEVINGTON, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR BOWMAN, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS BLACKBURN, BOYCE, BRINKLEY, GILBERT, GOHDES, IRVING, SANDERS, STEVENSON, AND TURNER; ASSOCIATE PROFESSORS FISHER, HARWELL, PATTON, REARDON, AND WHITE; ASSISTANT PROFESSORS BEVINGTON, BUDD, JORDAN, MICHALAK, POTEAT, SCHWERMAN, SMITH, AND WETHERBY; DRs. ANDERSON, HENINGER, KOTTLER, MAJOR, SPENCER, AND WICKES; MESSRS. BOATWRIGHT, BORNHAUSER, GRAVES, HARGREAVES, McDONALD, MORRIS, REEVES, AND VAN FOSSEN

L. ENGLISH FUNDAMENTALS.—All freshmen whose scores on the placement tests indicate that they are not ready for English 1 must take this course. Students who fail in English L must repeat the course. Students who have earned credit in English L must also take English 1 and 2. 3 s.h. (w)

ASSISTANT PROFESSOR JORDAN AND MR. GRAVES

1-2. ENGLISH COMPOSITION.—All freshmen are required to take course 1 and course 2. (For exemptions, see Uniform Course Requirements, p. 94.)

Students who fail in English 1 or 2 must repeat the course in the following semester. Students in courses 1 and 2 who fail to make an average of "C" or better are strongly advised to earn credit for an additional course in English composition. 6 s.h. (E & W)

ASSOCIATE PROFESSOR BOWMAN AND STAFF

33. WRITING LABORATORY.—A non-credit course in elementary composition which may be elected by students who need it, or may be required of certain students under the conditions stated on page 92, "Deficiencies in Composition." Students may enter or leave this course at any time, at the instructor's discretion. (w)

MR. REEVES, MR. GRAVES

53. ENGLISH COMPOSITION.—A course in advanced composition and grammar. Emphasis is placed first on the student's mastering the fundamental principles of English grammar and the other essentials of correct writing. Weekly themes are required. 3 s.h. (w)

ASSISTANT PROFESSOR JORDAN

65-66. ENGLISH COMPOSITION.—A foundation course in imaginative writing, both prose and verse. Open to sophomores and in special cases to freshmen. The consent of the instructor is required. 6 s.h. (E)

PROFESSOR SANDERS

E93. WRITTEN AND ORAL COMMUNICATION FOR ENGINEERS.—Emphasis will be placed on the writing of business letters, technical reports, and articles for submission to technical journals. Approximately one-third of the course will provide training in the oral presentation of various materials. Prerequisite: English I and 2. 3 s.h. (w) ASSOCIATE PROFESSOR HARWELL

101. EXPOSITORY ENGLISH COMPOSITION.—The course attempts to encourage fluency and accuracy in expository expression. Primarily for juniors and seniors; open also to sophomores approved by the instructor. 3 s.h. (w)

103-104. ENGLISH COMPOSITION.—A course in descriptive and narrative writing. Class discussion of students' manuscripts, supplemented by a critical evaluation of a few selected short stories and by individual conferences with the instructor. Open to sophomores, juniors, and seniors. The consent of the instructor should be secured as early as possible in the spring semester. Prerequisites for English 104: English 103. 6 s.h. (E) PROFESSOR BLACKBURN

SPEECH AND DRAMA

118. PERSUASIVE SPEAKING.—The psychological and sociological techniques used in gaining acceptance of ideas through speech. Study is made of the factors influencing human behavior; audience analysis and motivation; choice, arrangement, and adaptation of material. Extensive practice in persuasive speaking. Prerequisite: English 151 or consent of the instructor. 3 s.h. (w) ASSISTANT PROFESSOR WETHERBY

119. HISTORY OF THE THEATRE.—The origin and development of drama, acting, and stagecraft from ancient Greece to the modern European and American theatre. Production problems of representative plays of the various periods will be discussed. Primarily for juniors and seniors, open also to sophomores approved by the instructor. 3 s.h. (E) ASSOCIATE PROFESSOR REARDON

121. STAGECRAFT.—An introductory course on the technical aspects of play production: scenery, lighting, properties, make-up, and costuming. Lectures and laboratory. Laboratory work will be coordinated with the various productions of the Duke Players. Primarily for juniors and seniors; open also to sophomores approved by the instructor. 3 s.h. (E)

ASSOCIATE PROFESSOR REARDON AND ASSISTANT PROFESSOR MICHALAK

122. PLAY PRODUCTION.—An introduction to the methods of producing a play: theatre organization, play selection, casting, and rehearsal. Lectures and laboratory. Primarily for juniors and seniors; open also to sophomores approved by the instructor. 3 s.h. (E)

ASSOCIATE PROFESSOR REARDON AND
ASSISTANT PROFESSOR MICHALAK

139. THE SPEAKING VOICE.—The correction of minor functional speech disorders. The speech organs and their function. The International Phonetic Alphabet and its use. Drill in pronunciation, diction, vocal quality. Primarily for sophomores, juniors, and seniors; also open to freshmen with the consent of the instructor. 3 s.h. (E & w) ASSISTANT PROFESSORS SCHWERMAN AND WETHERBY
[Offered both semesters]

150. ORAL INTERPRETATION OF LITERATURE.—A study of poetry and certain types of prose, with practice in the technique by which they may be communicated to an audience. 3 s.h. (w) ASSISTANT PROFESSOR SCHWERMAN

151. ESSENTIALS OF PUBLIC SPEAKING.—A basic course in public speaking, designed to give the student the poise and confidence necessary to think and speak freely before an audience. Particular attention is paid to the gathering and organization of speech materials and to oral presentation. 3 s.h. (E & w)

ASSOCIATE PROFESSOR REARDON AND ASSISTANT PROFESSORS SCHWERMAN,
[Offered both semesters] WETHERBY AND MICHALAK

152. ARGUMENTATION.—The principles of argumentation and debating. The techniques of analysis, investigation, evidence, reasoning, brief making, and refutation. Participation in class discussions and debates. Prerequisite: English 151 or consent of the instructor. 3 s.h. (w) ASSISTANT PROFESSOR WETHERBY
[Offered in the fall semester]

171, 172. RADIO BROADCASTING.—The theory and practice of radio broadcasting. The purpose, preparation, and production of various types of radio programs. There will be experience before a microphone in a studio situation. Laboratory work both semesters. Primarily for juniors and seniors; open also to sophomores approved by the instructor. 6 s.h. (w)

ASSISTANT PROFESSORS WETHERBY AND MICHALAK

ENGLISH AND AMERICAN LITERATURE AND LANGUAGE

55, 56. REPRESENTATIVE WRITERS.—The following works are studied in the first semester: Chaucer's Prologue to *The Canterbury Tales* and at least two tales, Shakespeare's *1 Henry IV* and *King Lear* and one other play, John Donne's poems, Milton's *Paradise Lost* (selections) and some of the shorter poems; in the second semester; Pope's *Poems* (selections), Fielding's *Joseph Andrews*, Keats's *Poems and Letters*, Arnold's *Selected Poetry and Prose*, Dickens's *Bleak House*, Yeats's *Collected Poems*, Shaw's *Saint Joan*, and a twentieth-century novel 6 s.h. (E & W)

PROFESSORS BEVINGTON, BLACKBURN, BOYCE, SANDERS, AND STEVENSON;

ASSOCIATE PROFESSORS FISHER, HARWELL, AND PATTON; ASSISTANT

PROFESSORS BEVINGTON, JORDAN, POTEAT, AND SMITH;

DRS. ANDERSON, HENINGER, KOTTLER, MAJOR,

AND SPENCER; MESSRS. McDONALD,

MORRIS, VAN FOSSEN

111, 112. EIGHTEENTH-CENTURY LITERATURE.—The writers emphasized in the first term are Pope, Swift, Defoe, Addison, Steele, Fielding; in the second term, Johnson, Gray, Boswell, Sheridan, the later novelists, and Blake.

PROFESSOR BOYCE

117. MILTON.—Milton's poetry and prose, together with their relation to the period and to other great works of literature. Lectures, discussion, occasional tests, one or two papers. 3 s.h. (E)

PROFESSOR BRINKLEY AND DR. MAJOR

123, 124. SHAKESPEARE.—In the first semester twelve plays, before 1600; in the second semester ten plays, after 1600. Occasional tests and one or two papers. 6 s.h. (E & W)

ASSOCIATE PROFESSOR BOWMAN; DR. MAJOR, DR. WICKES

125, 126. ENGLISH LITERATURE, 1789-1832.—The course begins with selections from the poetry of the forerunners of Romanticism. The chief emphasis in the first semester is on the work of the older Romantics: Wordsworth, Coleridge, Southey, Scott, and Lamb. In the second semester the chief emphasis is on the work of the younger Romantics: Byron, Shelley, Keats, Leigh Hunt, Hazlitt, and DeQuincey. Informal lectures and class discussion of assigned texts. A limited amount of outside reading is required and also some memory work. There are four tests each semester. 6 s.h. (E & W)

PROFESSOR SANDERS, PROFESSOR STEVENSON;

ASSOCIATE PROFESSOR PATTON

129, 130. ENGLISH NOVEL.—The work of the first semester covers the history of the novel through Scott; that of the second semester, from Dickens through Hardy. Lectures and book reports. 6 s.h. (E)

ASSISTANT PROFESSOR SMITH

131, 132. ENGLISH LITERATURE, 1832-1900.—A study of the chief English writers of poetry, prose, and drama from Carlyle to Yeats. The major writers studied in the first semester are Carlyle, Tennyson, Browning, Macaulay, Mill, Newman, and Arnold; in the second semester, Ruskin, the Rossetti, Morris, Swinburne, Shaw, and Yeats, with selections from minor writers. Collateral reading from novels of the period. Lectures, discussions, tests, and reports. 6 s.h. (E & W)

PROFESSORS BEVINGTON AND SANDERS

134. CONTEMPORARY POETRY.—A reading course in the poetry of the twentieth century in England, Ireland, and America, beginning with Gerard Manley Hopkins, and William Butler Yeats. An anthology of modern poetry is read and discussed, supplemented by the wider reading of individual poets. Informal lectures and discussions with a critical paper for the term. Open to juniors and seniors, and occasionally to sophomores by special permission. 3 s.h. (E)

ASSISTANT PROFESSOR BEVINGTON

137, 138. AMERICAN LITERATURE.—A survey of American literature from colonial times to the present. Selections from the works of important authors are read, from Cotton Mather to Eugene O'Neill, and complete novels by Hawthorne, Melville, James, Howells, and others. The work of the first semester ends with the Civil War period. Lectures, monthly tests, and a term paper each semester. 6 s.h. (E & W) PROFESSORS GOHDES AND TURNER; ASSISTANT PROFESSOR BUDD; DR. ANDERSON

141. CHAUCER.—*The Canterbury Tales* and the minor poems, with attention to their literary, social, and religious background. Lectures, discussions and reports. 3 s.h. (W) DR. KOTTLER

143, 144. ENGLISH LITERATURE: ELIZABETHAN AND EARLY SEVENTEENTH CENTURY.—A study of the prose, poetry, and drama of the period. First semester: the emphasis in prose is on Sidney; in poetry, on Spenser and Shakespeare; in drama, on Marlowe and Jonson. Second semester: the emphasis in prose is on the English Bible, Bacon, Browne; in poetry, on Donne and on the early poems of Milton; in drama, on Webster and Ford. Lectures, tests, and one or two brief papers. 6 s.h. (E) PROFESSOR BLACKBURN

153, 154. COMPARATIVE LITERATURE.—Important works in European literature are read in translation and related to similar documents in English literature. In the first semester are read: nine Greek tragedies, five of Plato's *Dialogues*, Vergil's *Aeneid*, Dante's *Inferno*, and Cellini's *Autobiography*; in the second semester, Machiavelli, Cervantes, Molière, Voltaire's *Candide*, Goethe's *Faust*, Dostoevski's *The Brothers Karamazov*, Ibsen's plays. Discussions, tests, reports. 6 s.h. (E) DR. HENINGER

155. MODERN EUROPEAN DRAMA.—The emphasis is on Ibsen, Strindberg, and Chekhov, and on the Free Theatre movements. Some quite recent plays will also be studied. 3 s.h. (E) ASSOCIATE PROFESSOR WHITE

156. MODERN BRITISH AND AMERICAN DRAMA.—Types of drama are studied in relation to European origins and to contemporary scene. The students subscribe to *Theatre Arts*. 3 s.h. (E) ASSOCIATE PROFESSOR WHITE

158. CONTEMPORARY FICTION.—Intensive reading in selected fiction since 1890, with emphasis on form and technique. Conrad, James, Lawrence, Kafka, Proust, Joyce, Huxley, and Faulkner. Lectures, discussions, reports on outside reading, and a term paper. 3 s.h. (W) ASSISTANT PROFESSOR SMITH

161, 162. MODERN ENGLISH AND ITS BACKGROUNDS.—An elementary historical and descriptive study of the English language: patterns of change and growth, standards of usage and pronunciation. Some attention is given to the methods of linguistic inquiry and to the relations of philology to literary studies. The first semester is devoted chiefly to a historical study of written and spoken English, the second to a description of modern American English. Lectures, discussions, and short reports. 6 s.h. (E)

165. AMERICAN FICTION.—A survey of the American novel and short story in the nineteenth century, from Washington Irving to Henry James. Lectures, discussions, and a critical paper. 3 s.h. (E) ASSISTANT PROFESSOR BUDD

166. AMERICAN FICTION.—A survey of the American novel and short story in the present century, centered around ten representative books. Lectures, discussions, and frequent quizzes. 3 s.h. (E) ASSISTANT PROFESSOR BUDD

197-198. SENIOR SEMINAR IN ENGLISH.—A course designed to offer guidance in the analysis and interpretation of English and American literature to students of superior ability. Comparative studies will be encouraged, and considerable reading will be required in critical and aesthetic theory. Emphasis will be placed upon the quality of the final essay. Admission by invitation of the department. 6 s.h. PROFESSOR BEVINGTON

FOR SENIORS AND GRADUATES

203, 204. CHAUCER.—Reading and interpretation of the text; in the first semester the minor poems and *Troilus*; in the second, the *Canterbury Tales*. 6 s.h. [Not offered in 1957-58.] ASSOCIATE PROFESSOR FISHER

207-208. HISTORY OF THE ENGLISH LANGUAGE.—A survey of the language from Old to Present English, taking into consideration developments in phonology, morphology, syntax, and vocabulary. 6 s.h. ASSOCIATE PROFESSOR FISHER

215, 216. ELIZABETHAN DRAMA.—Careful study of one or two major dramatists (Jonson or Beaumont and Fletcher) and extensive reading in the other writers (Heywood, Ford, Massinger, Marlowe, Middleton) with emphasis on the nature and qualities of their work in relation to its historical background. 6 s.h. (w) PROFESSOR GILBERT

217. MILTON.—Milton's poetry and prose, with emphasis on the major poems. 3 s.h. (w) PROFESSOR GILBERT

218. SPENSER.—The reading of Spenser's works, with chief attention to *The Faerie Queene*. 3 s.h. (w) [Not offered in 1957-58.] PROFESSOR GILBERT

219, 220. THE EIGHTEENTH CENTURY.—Swift, Pope, Defoe, Addison, Steele, and others are studied in the first semester; in the second, Gray, Johnson, Boswell, Goldsmith, the letter writers, and the early Romantic poets. 6 s.h. (w) [Not offered in 1957-58.] PROFESSOR BOYCE

221, 222. ENGLISH LITERATURE OF THE EARLY NINETEENTH CENTURY.—The British Romantic poets and prose writers from Scott to the early Carlyle, with special attention to Wordsworth, Coleridge, and Keats. 6 s.h. [Not offered in 1957-58.] PROFESSOR SANDERS, PROFESSOR STEVENSON

223, 224. ENGLISH LITERATURE OF THE LATER NINETEENTH CENTURY.—Some of the most important works of the period are discussed; the background is filled in by lectures and assigned reading. The first semester is devoted chiefly to Carlyle, Dickens, Thackeray, Tennyson, and Browning; the second semester to Arnold, Ruskin, Pater, George Eliot, Meredith, the Pre-Raphaelites, and Swinburne. 6 s.h. (w) PROFESSOR STEVENSON

227. LITERARY CRITICISM.—A study of the Greek and Roman critics, in chronological order but with emphasis on their permanent value rather than on the mere history; also the Continental and English critics to about 1700. 3 s.h. (w) [Not offered in 1957-58.] PROFESSOR GILBERT

229, 230. AMERICAN LITERATURE, 1800-1870.—The writers emphasized in the first semester are Emerson, Thoreau, and Hawthorne; in the second semester, Poe and Melville. 6 s.h. PROFESSOR TURNER

231. EMERSON.—A study of Emerson's ideas as reflected in selected examples of his essays and poems. 3 s.h. PROFESSOR GOHDES

232. WHITMAN.—A detailed study of *Leaves of Grass* and of selected prose works. 3 s.h. (ε) [Not offered in 1957-58.] PROFESSOR GOHDES

233. AMERICAN LITERATURE 1870-1900.—Selected works of the chief authors of the period, including Whitman, Lanier, Mark Twain, James, Howells, Crane, and Emily Dickinson. The lectures will deal with the social background as well as the literary trends and the careers of the major authors. 3 s.h. PROFESSOR GOHDES

234. AMERICAN LITERATURE OF THE TWENTIETH CENTURY.—Selected works of representative authors, including Dreiser, Edith Wharton, Mencken, Lewis, Willa Cather, O'Neill, Robinson, Frost, Eliot, Hemingway, and Faulkner. The lectures will deal primarily with literary trends as shaped by the social background. 3 s.h. PROFESSOR GOHDES

237. ENGLISH DRAMA, 1642-1800.—The heroic play and the comedy of manners of the Restoration; the important plays, serious and comic, of the eighteenth century. 3 s.h. [Not offered in 1957-58.] PROFESSOR WARD

239. SHAKESPEARE.—A study of the plays and poems, with attention to sources, earlier criticism, and the work of Shakespeare's contemporaries. 3 s.h. PROFESSOR GILBERT

245. THE EIGHTEENTH-CENTURY NOVEL.—Richardson, Fielding, Smollett, and Sterne are emphasized. Some attention is given to earlier prose fiction and to other contributing literary patterns. 3 s.h.
 PROFESSOR BOYCE
 [Not offered in 1957-58.]

251, 252. ENGLISH LITERATURE IN THE SEVENTEENTH CENTURY.—A survey course. The major works in prose, poetry, and drama from 1600 to the death of Dryden. 6 s.h.
 PROFESSOR WARD

262. ENGLISH LITERATURE OF THE EARLY TWENTIETH CENTURY.—Representative work of leading writers from 1900 to 1930, in the fields of fiction, drama, poetry, and essay. Critical analysis of selected specimens, and discussion of types, themes, and trends. 3 s.h.
 PROFESSOR STEVENSON
 [Not offered in 1957-58.]

269, 270. SOUTHERN LITERATURE.—The principal authors and the chief literary developments from the beginnings to the present. Emphasis in the first semester is on Byrd, Kennedy, Simms, Poe, Timrod, and the humorists; in the second on Lanier, Harris, Cable, Mark Twain, Ellen Glasgow, and Faulkner. Attention is given to the historical and cultural background and to literary relations extending outside the region. 6 s.h.
 PROFESSOR TURNER
 [Not offered in 1957-58.]

273. HAWTHORNE AND MELVILLE.—Extensive reading in the works of Hawthorne and Melville, and close study of selected writings. 3 s.h.
 PROFESSOR TURNER
 [Not offered in 1957-58.]

274. AMERICAN HUMOR.—The development of the native tradition in the Down-East humorists and the humorists of the Old Southwest. Extensive reading in Mark Twain and his contemporaries, and some attention to the continuation of the tradition after Mark Twain. 3 s.h.
 PROFESSOR TURNER
 [Not offered in 1957-58.]

DEPARTMENTAL MAJOR

Prerequisite: English 1 and 2.

Major Requirements: Twenty-four semester hours in English and American literature including the following:

1. Six hours in English 55-56.
2. Six hours at the Junior-Senior level (generally to be taken in the Junior year) in one of five designated period courses (143-144, 111-112, 125-126, 131-132, 137-138).
3. Three hours in one of the major authors, Chaucer, Shakespeare, or Milton (141, 203, 204, 123, 124, 239, 117, 217).
4. Six hours (to be taken in the Senior year) in Senior-Graduate courses, numbered at the 200 level. These courses are to be chosen so that surveys of particular periods do not duplicate in subject matter the courses taken in (2) above. This requirement becomes effective with the graduating class of 1959.
5. The remaining hours must meet the following distribution requirements:
 - (a) Three hours of English literature before 1800, unless the requirement is met in (2) or (4) above.
 - (b) Three hours of English literature after 1800, unless the requirement is met in (2) or (4) above.
 - (c) Three hours of American literature, unless the requirement is met in (2) or (4) above.

Related Work: Eighteen semester hours, which may include appropriate courses in history, aesthetics, art, music, languages, literature in translation, philosophy, or courses in composition, dramatics, and speech. Related work must be taken in at least two departments.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

FORESTRY

Students without a Bachelor's degree who are preparing for work in forestry as a profession should take the courses outlined under the Academic-Forestry Combination in the section on Requirements for Degrees. However, with the consent of the instructor in charge, certain forestry courses may be elected by students in other curricula provided they have had adequate preparation (see *Bulletin of the School of Forestry*).

Members of the sophomore, junior, and senior classes, whether or not registered in the Academic-Forestry Combination, may elect the following course:

52. **PRINCIPLES OF FORESTRY.**—Introduction to forestry in the United States; growth of trees and forests; social and economic problems in developing America's primary renewable natural resource; contribution of forests to the national economy. 2 s.h. (w)

GEOLOGY

PROFESSOR BERRY, CHAIRMAN AND DIRECTOR OF UNDERGRADUATE STUDIES; VISITING PROFESSOR ROBERTSON; ASSISTANT PROFESSOR HERON AND MR. FURBISH

51. **GENERAL GEOLOGY.**—This course is designed to give a general view of the surface features of the earth, their origin, structure, and materials. Illustrative materials are studied in the laboratory. Excursions are made to neighboring points where the principles of the science are studied in the field. Three one-hour lectures or recitations and one three-hour laboratory. 4 s.h. (E)

ASSISTANT PROFESSOR HERON AND MR. FURBISH

52. **GENERAL GEOLOGY.**—This course is designed to give some knowledge of the chief events of the earth's history. Excursions will be made to suitable neighboring localities. Three one-hour lectures or recitations and one three-hour laboratory. Prerequisite: Geology 51. 4 s.h. (E)

ASSISTANT PROFESSOR HERON AND MR. FURBISH

55. **STRUCTURAL GEOLOGY.**—A study of the structural features of the earth's crust. Three one-hour lectures. Prerequisite: Geology 51, 52. 3 s.h. (E)

ASSISTANT PROFESSOR HERON

58. **GEOMORPHOLOGY.**—A detailed study of the process at work on the land surface and the topographic forms produced by them under different climatic conditions. This course includes practice in the interpretation of topographic maps. Three one-hour lectures or recitations and one three-hour laboratory. 4 s.h. (E)

PROFESSOR BERRY

101-102. **MINERALOGY.**—This course is devoted to a study of the fundamentals of crystallography and the crystal groups, using crystal models and crystallized minerals. Followed by the systematic study of about 175 important minerals. Determinative work includes exercises on sight recognition, identification by blow-pipe, and other physical and chemical tests. Excursions will be made to neighboring mineral localities. Three two-hour periods. Prerequisite: Chemistry 1-2 (can be taken concurrently). 8 s.h. (E)

PROFESSOR BERRY

151. **ECONOMIC GEOLOGY.**—Study of world distribution, geologic occurrence, and uses of important mineral deposits. Three one-hour lectures or recitations and one three-hour laboratory. Prerequisite: Geology 101-102. 4 s.h. (E)

PROFESSOR BERRY

152. **INTRODUCTORY PALEONTOLOGY.**—Systematic study of invertebrate paleontology, dealing mainly with generic characters of the fossil invertebrates and their use in identifying and correlating geologic formations. Three one-hour lectures or recitations and one three-hour laboratory. Prerequisites: Geology 51, 52, and Zoology 2. 4 s.h. (E)

PROFESSOR BERRY

164. **INTRODUCTION TO GEOLOGIC MAPPING.**—An introduction to the fundamental principles and techniques used in geologic mapping, including applicable methods of surveying, the use of aerial photographs, the interpretation of

geologic maps, and the solution of problems in geologic relationships. Field excursions will be made when possible. Two hours of lecture and three hours of laboratory each week. Prerequisites: Geology 51, 52, 55, 151. 3 s.h. (E)

ASSISTANT PROFESSOR HERON

DEPARTMENTAL MAJOR

Prerequisites: Chemistry 1-2; Zoology 2, Geology 51, 52.

Major Requirements: 1. Number of hours needed, 30 s.h. 2. Required courses, Geology 55, 101-102, 151, 152, 164. 3. Recommended courses, Geology 58.

Related Work: 1. Number of hours needed for A.B., 12 s.h.; for B.S., 18 s.h. 2. Required courses, 1 year Mathematics. 3. Departments in which related work is usually taken, Chemistry, Economics 115-116, Mathematics, Physics, Sociology 93, Zoology, and Engineering.

GERMANIC LANGUAGES AND LITERATURE

PROFESSOR SALINGER, CHAIRMAN; ASSOCIATE PROFESSOR MAXWELL, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR WILSON, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSOR SHEARS; ASSISTANT PROFESSOR TARABA; DR. ILKOW

1-2. ELEMENTARY GERMAN.—6 s.h. (E & W)

ASSOCIATE PROFESSOR MAXWELL AND STAFF

3-4. INTERMEDIATE GERMAN.—6 s.h. (E & W)

ASSOCIATE PROFESSOR WILSON AND STAFF

51-52. INTRODUCTION TO GERMAN LITERATURE.—A third year course. Both literary and linguistic factors are combined with practice in the spoken language. 6 s.h.

PROFESSOR SHEARS AND STAFF

For courses in the 100 and 200 group, which will be offered in 1957-58, please consult list furnished by Dean's office before registration. The only prerequisite for 100 group courses is German 3-4.

107, 108. SCIENTIFIC GERMAN.—The German language as used in the various contemporary sciences. 6 s.h.

ASSOCIATE PROFESSORS MAXWELL AND WILSON

109, 110. GERMAN PROSE FICTION.—Origin and development of the German novel with special emphasis on the nineteenth century. 6 s.h.

ASSOCIATE PROFESSOR WILSON

115, 116. GERMAN DRAMA OF THE NINETEENTH CENTURY.—A study of leading dramatists from Kleist to Hauptmann. 6 s.h.

ASSOCIATE PROFESSOR WILSON

117, 118. GERMAN CONVERSATION.—A course in writing and speaking German for properly qualified students. 6 s.h.

ASSISTANT PROFESSOR TARABA AND DR. ILKOW

119, 120. GERMAN LITERATURE IN ENGLISH TRANSLATION.—The great epochs in German literature studied through English translations of representative masterpieces. 6 s.h.

PROFESSOR SALINGER

125, 126. CONTEMPORARY GERMAN LITERATURE.—A study of representative works of the twentieth century. 6 s.h.

PROFESSOR SHEARS

131, 132. INTRODUCTION TO GOETHE.—The reading of his early novels and epics and works pertaining to his life. 6 s.h.

ASSOCIATE PROFESSOR MAXWELL

133, 134. THE GERMAN LYRIC.—A survey of the development of German lyric poetry, principally from Klopstock to Rilke (with some attention to mediaeval and early modern poets), seen as poetic reflection of German thought. 6 s.h.

PROFESSOR SALINGER

201, 202. GOETHE.—A study of his life and works in the light of his lasting significance to World Literature. 6 s.h.

PROFESSOR SALINGER

203, 204. EIGHTEENTH CENTURY.—Eighteenth-century German literature in its relation to contemporary European philosophy. 6 s.h.

PROFESSOR SALINGER

205, 206. MIDDLE HIGH GERMAN.—The language and literature of Germany's first classical period. 6 s.h.
ASSISTANT PROFESSOR TARABA

207, 208. GERMAN ROMANTICISM.—The course covers the entire field of German romanticism from 1800 to 1850. 6 s.h.
PROFESSOR SALINGER

209, 210. KLEIST, GRILLPARZER, and HEBBEL.—The development of the drama in Germany and Austria between Schiller and Naturalism. 6 s.h.
PROFESSOR SALINGER

211, 212. HEINRICH HEINE AND HIS TIME.—Heine's life and thought, and the contemporary European culture. 6 s.h.
PROFESSOR SALINGER

213, 214. LITERATURE OF THE EMPIRE, 1871-1914.—A study of the literature of this period with emphasis on a few leading writers. 6 s.h.
PROFESSORS SHEARS AND SALINGER

DEPARTMENTAL MAJOR

1. Prerequisites: German 1-2 and 3-4.

2. Major Requirements: Twenty-four semester hours in the German Department. Twelve of these must be selected from the 200 courses. The remaining twelve may be selected from German 51-52 and any courses in the 100 group except 119-120.

3. Related Work: Eighteen semester hours, chosen from the Humanities with the approval of the German Department.

GOVERNMENT

See courses listed under Political Science.

GREEK

ASSOCIATE PROFESSOR TRUESDALE, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR ROSE, SUPERVISOR OF FRESHMAN INSTRUCTION;
ASSOCIATE PROFESSOR WAY

Courses 15, 121, 122, 131, 141, 142 are entirely in English and require no knowledge of the Greek language. The purpose in offering them is to give a wider circle of students some conception of the debt which modern civilization owes to the Greeks.

1-2. COURSE FOR BEGINNERS.—Open to all students. 6 s.h. (w)

ASSOCIATE PROFESSOR TRUESDALE

15. MYTHOLOGY.—A study of Greek mythology and the use made of it in art and English literature. No knowledge of the Greek language is required. Open to freshmen as an elective in either semester. 3 s.h. (w & e)

ASSOCIATE PROFESSORS TRUESDALE AND WAY

53-54. XENOPHON.—*Anabasis*, Books I-IV. Open to students who have completed course 1-2. 6 s.h. (w)

ASSOCIATE PROFESSOR ROSE

105-106. HOMER.—*Iliad*, Books 1-III. PLATO.—*Apology* and *Crito*. Open to students who have completed courses 1-2 and 53-54 or their equivalents. 6 s.h. (w)

ASSOCIATE PROFESSOR TRUESDALE

107-108. EURIPIDES.—*Medea*. SOPHOCLES.—*Oedipus Tyrannus*. ARISTOPHANES.—*Clouds*. Open to students who have completed the required preliminary work. 6 s.h. (w)

ASSOCIATE PROFESSOR WAY

117-118. GREEK PROSE COMPOSITION.—The character of this course is determined by the needs of the students enrolled. 3 s.h. (w)

ASSOCIATE PROFESSOR ROSE

121, 122. GREEK LITERATURE IN ENGLISH TRANSLATION.—The purpose of this course is to give a general survey of the life and civilization of the Greeks, especially to those who have never studied the language but wish to become acquainted with some of the choicest portions of the literature by the use of trans-

lations. It is, however, open as an elective to all juniors and seniors, whether they know Greek or not. First, the *Iliad* and the *Odyssey* are read in translation and illustrated with stereopticon views of the excavations and discoveries at Troy and other cities of the Aegean age; then, many of the extant plays of the three great tragic poets are studied in English translation. 6 s.h. (W & E)

ASSOCIATE PROFESSORS ROSE AND TRUESDALE

Students may elect course 122, whether they have taken course 121 or not.

131. HISTORY OF GREECE.—The history of the Greek world from the Late Bronze Age to the Macedonian conquest. Open to seniors, juniors, and (by arrangement) sophomores. No knowledge of Greek is required. 3 s.h. (E)

ASSOCIATE PROFESSOR WAY

141, 142. GREEK ART.—(May be treated as two semester-courses.) Open to seniors, juniors, and sophomores. A comprehensive survey of the development of Greek architecture and Greek sculpture in all periods. Course 141 is opened by a preliminary account of Egyptian, Mesopotamian, and Aegean artistic backgrounds. Course 142 is devoted chiefly to Greek art of the greatest period with the main emphasis on sculpture, and may be elected independently of course 141. All lectures are fully illustrated by slides. No knowledge of Greek is required. 6 s.h. (E)

ASSOCIATE PROFESSOR WAY

201-202. GREEK TRAGEDY.—6 s.h. (w)

ASSOCIATE PROFESSOR TRUESDALE

DEPARTMENTAL MAJOR

Prerequisite: Greek 1-2.

Major Requirements: A candidate for a major in Greek must complete 24 semester hours, including the following courses: Greek 53-54, 105-106, 107-108, 117-118, and 131.

Related Work: Eighteen semester hours selected from at least two other departments subject to the approval of the Greek Department. Appropriate courses are chosen usually in Latin, Philosophy, Art, and English.

Graduates of Duke University may attend the American School of Classical Studies at Athens, Greece, without charge for tuition and are eligible to compete for the fellowships that are offered annually by the School. These consist of two fellowships in Greek archaeology and one in the language, literature, and history of ancient Greece, each with a stipend of \$2,000. They are awarded mainly on the basis of examinations held in the beginning of February of each year.

HEALTH AND PHYSICAL EDUCATION

TRINITY COLLEGE AND THE COLLEGE OF ENGINEERING

MR. CAMERON, DIRECTOR; PROFESSOR AYCOCK, DIRECTOR OF UNDERGRADUATE STUDIES AND SUPERVISOR OF FRESHMAN INSTRUCTION; ASSOCIATE PROFESSOR HARRISON; ASSISTANT PROFESSORS BLY, BRADLEY, COX, FALCONE, MONTFORT, AND PERSONS;
MESSRS. BUEHLER, COBB, AND DRAGO

REQUIRED PHYSICAL EDUCATION FOR MEN

A student must complete four semesters of physical education in order to fulfill graduation requirements.

All students are given a medical and physical examination before registration. Students who have physical handicaps must register in Corrective Physical Education. Students assigned to these classes will take work suited to their particular needs and capacities.

Students without defects will register in Physical Education 1 and 2 in their freshman year. The activities are selected from the following: Apparatus, combative games (fundamentals of basketball, soccer, volleyball), swimming and tumbling. Swimming is required each semester of freshman year.

After a student has completed Physical Education 1 and 2, he may complete his physical education requirement by electing and satisfactorily completing two courses

from the following individual and team sports: 51. Apparatus-Tumbling; 52. Badminton; 53. Basketball-Handball; 54. Boxing-Wrestling; 56. Swimming, advanced; 57. Tennis-Volleyball; 58. Golf.

For information concerning gymnasium uniforms see page 195.

ELECTIVES IN PHYSICAL EDUCATION

The courses listed below are arranged to meet the increasing demand for teachers who are qualified to coach and teach Physical Education. They are open for credit only to students in the High School Teaching Program. These students may elect 15 semester hours from courses in this group. Six semester hours may be elected from the courses listed under Special Methods in Physical Education and 9 semester hours may be elected from the courses listed under Theory and Practice in Physical Education. The courses should be selected with the advice of the Director of Undergraduate Studies in order to meet the needs of the individual.

SPECIAL METHODS IN PHYSICAL EDUCATION

163. **ATHLETIC COACHING IN SECONDARY SCHOOLS.**—Theory and practice in the fundamentals of coaching baseball and track. Prerequisites: courses 1 and 2. Open to juniors and seniors. Sophomores by permission only. 3 s.h. (w)
MESSRS. CHAMBERS AND PARKER

164. **ATHLETIC COACHING IN SECONDARY SCHOOLS.**—Theory and practice in the fundamentals of coaching football and basketball. Prerequisites: courses 1 and 2. Open to juniors and seniors. Sophomores by permission only. 3 s.h. (w)
MR. CAMERON AND STAFF

THEORY AND PRACTICE IN PHYSICAL EDUCATION

65. **HISTORY AND PRINCIPLES OF PHYSICAL EDUCATION.**—A study of the objectives and principles upon which physical education is based. The history of physical education is studied in order to show the changes in objectives, principles, and methods and as an aid in the interpretation of trends. Open to sophomores, juniors, and seniors. 3 s.h. (w)
PROFESSOR AYCOCK

172. **RECREATIONAL LEADERSHIP.**—Combative contests, games, mass athletics, supervision of community recreation. Open to juniors and seniors. Sophomores by permission only. 3 s.h. (w)
ASSOCIATE PROFESSOR HARRISON

182. **THE ADMINISTRATION OF HEALTH AND PHYSICAL EDUCATION IN SECONDARY SCHOOLS.**—Presents the everyday problems that arise in the experience of the teacher of health and physical education. Open to juniors and seniors. 3 s.h. (w)
ASSOCIATE PROFESSOR HARRISON

190. **PROTECTIVE PRACTICES IN PHYSICAL EDUCATION.**—A study of safety measures including training and first aid. Open to juniors and seniors. 3 s.h. (w)
MR. CHAMBERS AND ASSISTANT PROFESSOR MONTFORT

HEALTH EDUCATION

132. **SCHOOL HEALTH PROBLEMS.**—A course designed (a) to familiarize the teacher with school health problems such as physical screening, communicable disease prevention and control, healthful school environment; (b) to present methods and materials for health teaching in elementary and secondary schools. 3 s.h. (w)
PROFESSOR AYCOCK

WOMAN'S COLLEGE

PROFESSOR GROUT, CHAIRMAN AND DIRECTOR OF UNDERGRADUATE STUDIES; ASSISTANT PROFESSOR EDDY, SUPERVISOR OF FRESHMAN INSTRUCTION IN PHYSICAL EDUCATION;
ASSISTANT PROFESSOR UHRHANE, SUPERVISOR OF FRESHMAN INSTRUCTION
IN HEALTH EDUCATION; ASSOCIATE PROFESSORS BOOKHOUT AND
LEWIS; ASSISTANT PROFESSOR HOLTON; MRS. SMITH, MISS
SPANGLER, MISS WOODYARD, AND MRS. WRAY

A student must complete four semester hours of physical education in order to fulfill graduation requirements. Ordinarily work must be completed by the end of the sophomore year. Classes meet three times a week or the equivalent thereof.

Each semester is divided into two halves. In general, indoor activities are taught during the two winter half-semesters and outdoor activities in the fall and spring.

Every student must take one course (half-semester) in dance and one in swimming if she is unable to pass the swimming test. The remaining work necessary to complete the requirement may be elected from the activities listed in this section.

All students are given a physical and medical examination upon entering and at intervals throughout their college course. Classes in individual physical education and light sports are arranged for those who should not take the more active work.

For information concerning gymnasium costumes see page 195.

SPECIAL FRESHMAN PHYSICAL EDUCATION

At the beginning of the year, after a series of tests has been given, each freshman is registered for the course she most needs, as determined by the test scores. Such courses as sport fundamentals, fundamentals of rhythm, beginning swimming and posture are offered for those who need to improve their skills in these areas. Students whose test scores are satisfactory will enroll in classes with the sophomores.

For freshmen, the winter half of the first semester consists of body mechanics twice a week and social hygiene once a week.

PHYSICAL EDUCATION ACTIVITIES

Individual and dual sports: Archery, badminton, bowling, diving, fencing, golf, life saving, light sports, riding, swimming, tennis, first aid, instructors' life saving and water safety.

Team sports: Basketball, hockey, softball, volleyball.

Rhythmic Activities: Ballroom dance, folk dance, fundamental rhythms, modern dance, square dance, tap dance.

Developmental Activities: Body mechanics, individual physical education, sport fundamentals, posture.

PHYSICAL EDUCATION THEORY

The courses listed in this section are open for credit to students preparing to teach physical education and health on a full-time or part-time basis. Courses open to students other than physical education majors are: Physical Education 102 and Health Education 112, required of all students in the Elementary Teaching Program; Physical Education 107, open for credit to students preparing for social group work and religious education; course 116, primarily designed for students in physical therapy and taught in that department; Physical Education 105-106, 114, and Health Education 41 and 62, open for credit to all students.

91. FIRST AID AND SAFETY IN PHYSICAL EDUCATION.—A study of measures which must be taken in the organization and teaching of physical education to insure maximum safety. The Standard Red Cross First Aid Course will be included. 2 s.h. (E)
ASSOCIATE PROFESSOR BOOKHOUT

101. HISTORY AND PRINCIPLES OF PHYSICAL EDUCATION.—An historical survey of physical education stressing the relationship between the types of activity developed and the social and political ideals of different nations and periods. A study of the principles upon which physical education is based. Analysis of successful teaching in physical education. 2 s.h. (E)
PROFESSOR GROUT

102. THE TEACHING OF PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS.—A study of methods and materials used in teaching physical education to children; includes discussion on the theory of physical education, and practice in teaching elementary school activities. Required of students in the elementary school teaching program. 3 s.h. (E)
ASSOCIATE PROFESSOR LEWIS

103. GAMES AND RHYTHMS FOR CHILDREN.—Required of students preparing for full-time teaching in physical education. 2 s.h. (E)
[Offered every other year alternating with P.E. 107.] ASSOCIATE PROFESSOR LEWIS

105-106. METHODS AND MATERIALS IN RECREATION.—A course intended to familiarize students with recreation activities and methods of organizing groups in these activities. Laboratory work includes practical leadership experience with a recreational club or group in a city organization. General fields covered are:

Social Activities, Music Activities, Folk and Square Dancing, Games and Sports, Arts and Crafts, Drama Activities. Open to juniors and seniors without prerequisite. A year course meeting five periods per week throughout the year. Students who have had 102 or 103 may take 106 without 105. 6 s.h. (E)

ASSISTANT PROFESSOR HOLTON

107. THE TEACHING OF RHYTHMIC ACTIVITIES.—Basic theory and practice in the methods of teaching various types of dance activities. 2 s.h. (E)

[Offered every other year alternating with P.E. 103.]

MRS. WRAY

113. MAMMALIAN ANATOMY.—A study of all organ systems with special emphasis on osteology, arthrology and myology. The cat serves as laboratory animal, but constant application is made to man. Prerequisite: Zoology 1 and 2. 4 s.h. (E)

ASSOCIATE PROFESSOR BOOKHOUT

114. KINESIOLOGY.—A study of muscle function. Analysis of fundamental movements with emphasis on the development of normal posture and efficient body movement. Required of students taking the major in physical education. Prerequisites: Zoology 1 and 2, and P.E. 113 or Zoology 53. 3 s.h. (E) (Not open to students who have had P.E. 116.)

ASSOCIATE PROFESSOR BOOKHOUT

116. KINESIOLOGY.—A study of muscle function. Analysis of human motion as a basis for therapeutic exercise. Prerequisite: Human Anatomy. 3 s.h. (w) (Not open to students who have had P.E. 114.)

ASSOCIATE PROFESSOR BOOKHOUT

117. BODY MECHANICS AND INDIVIDUAL PHYSICAL EDUCATION.—A study of the fundamentals of body movement and teaching methods for courses in body mechanics. An analysis of faulty postures for which individual physical education procedures are indicated. 3 s.h. (E)

ASSOCIATE PROFESSOR BOOKHOUT

119. ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION.—Curriculum building in physical education. The administration of class and intramural programs. Administrative problems such as budget, equipment, facilities, interschool athletics, legal aspects, and public relations. 2 s.h. (E)

PROFESSOR GROUT

181-182. METHODS AND MATERIALS IN PHYSICAL EDUCATION.—A course in the theory and practice of teaching and officiating in games and sports. Laboratory hours arranged to provide practice on the field and in the gymnasium. 6 s.h. (E)

ASSOCIATE PROFESSOR LEWIS AND STAFF

185. ADVANCED METHODS AND MATERIALS IN PHYSICAL EDUCATION.—A continuation of 181-182. Required of seniors preparing for full-time teaching in physical education. 2 s.h. (E)

ASSOCIATE PROFESSOR LEWIS AND STAFF

HEALTH EDUCATION

41. PERSONAL HEALTH.—A presentation of basic health information appropriate to the college age group. Emphasis is placed on the individual's responsibilities and potential contributions toward personal and family health. Either semester. 3 s.h. (E)

ASSISTANT PROFESSOR UHRHANE

62. COMMUNITY HEALTH PROBLEMS.—This course includes problems of health in community living such as environmental health hazards and their control, health problems specific to certain groups, and the place and contribution of official and non-official public health agencies. Emphasis is placed on the responsibility of each community member to recognize problems and to work together toward the goal of a mentally, physically and socially healthful community. 3 s.h. (E)

ASSISTANT PROFESSOR UHRHANE

112. SCHOOL HEALTH.—This course is designed to meet the needs of the classroom teacher. It deals with the organization and administration of the school health program; with modern principles of education as applied to health education; with basic health problems confronting the schools; and with methods and materials for teaching health education. Primarily designed for students preparing to teach in elementary schools and for physical education majors. Either semester. 3 s.h. (E)

ASSISTANT PROFESSOR UHRHANE

REQUIREMENTS FOR TEACHING HEALTH AND PHYSICAL EDUCATION IN PUBLIC SCHOOLS

The following requirements have been set up for students in the Teaching Program who wish to qualify as full-time or part-time teachers of Health and Physical Education. These requirements meet the standards of the North Carolina Department of Public Instruction for certification in Health and Physical Education and of most of the other states represented in the student body. Students preparing to teach in any state are advised to consult the department about specific requirements.

Prerequisites: Physical Education 91 and 101. Zoology 1-2.

Major Requirements: 23 s.h. including Physical Education 103, 107, 114, 117, 119, 181-182, 185, and Health Education 112.

Related Work: 17 to 19 s.h. Of these hours 8 must be in anatomy and physiology (P.E. 113, Mammalian Anatomy and Zoology 151, Principles of Physiology). Of the remaining hours work done in Department of Education leading to teacher certification is acceptable. Courses in Chemistry, Zoology, Sociology, Psychology, Art and Music are recommended.

DOUBLE TEACHING MAJOR IN BIOLOGY AND PHYSICAL EDUCATION

This is an optional plan for those physical education majors who wish to be certified in a second subject.

Prerequisites: as listed above.

Major Requirements: as listed above.

Related Work: Botany 1 must be taken in addition to the anatomy and physiology courses listed above. The following courses in the Department of Education should be taken: Education 103, 118, 215-216, and 276.

HISTORY

PROFESSOR CARROLL, CHAIRMAN; ASSOCIATE PROFESSOR PARKER, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR FERGUSON, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS ALDEN, CLYDE, CURTISS, HAMILTON, LANNING, MANCHESTER, AND WOODY; ASSOCIATE PROFESSORS HOLLEY, NELSON, ROPP, AND WATSON; ASSISTANT PROFESSORS ACOMB, COLTON, DECONDE, DURDEN AND STEVENS; DRs. HOLLYDAY, TISCHENDORF AND YOUNG

The undergraduate courses in history are designed to afford (1) an introduction to the study of history by a consideration of the history of the modern world; (2) a more intensive study of general American history; (3) opportunities for more advanced study of phases of American, English, European, Hispanic-American, Russian, and Far Eastern history.

Course 1-2 or 51-52 or E1-2 or an equivalent is a prerequisite for all other courses; course E1-2 is the prescribed course for students in the College of Engineering; courses 91 and 92 are prerequisite for all 100 and 200 courses in United States history. However, seniors with written permission from the instructor may take advanced American history courses without having had 91 and 92. Sophomores who took only one semester of course 1-2 in the freshman year may take courses 91, 92, 95, 96 or 99 concurrently with the second semester, provided they made a grade of B or above on the semester taken. Sophomores must obtain permission of the instructor in order to be admitted to courses numbered above 100; students who are not fully qualified sophomores will not be admitted to these courses. Courses for seniors and graduates are limited to twenty-five students; juniors may not elect them without special permission from the Department and the Executive Committee of the Graduate Faculty.

1, 2. **HISTORICAL BACKGROUND OF THE WORLD TODAY.**—This course is an introduction to the study of modern history with special reference to the issues in the modern world. Topics selected for emphasis are: the contest between liberty and authority in the modern state; changing economic organization and

theory—capitalism and the challenges to it; the problems of peace and war among the states; the changing faiths men live and die by. Beginning about 1500 with the rise of the European dynastic states, the story is pursued in the first semester to approximately 1871, and in the second through the two great world wars. The central theme in both semesters is the expansion of the influence of Western Europe throughout the world, with some attention to the rise of the United States as a world power. 6 s.h. (w & e)

Sophomore and juniors are not admitted to this course.

ASSOCIATE PROFESSORS FERGUSON, PARKER, AND ROPP; ASSISTANT PROFESSORS ACOMB AND COLTON; DRs. HOLLYDAY, TISCHENDORF AND YOUNG

E1-2. THE UNITED STATES IN THE WORLD TODAY.—This course is designed for students in the College of Engineering. Topics treated in the first semester are: the rise of national states in Western Europe and other factors attending the discovery and settlement of the New World; the foundation of American institutions; the establishment of the Federal Republic; the frontier, the westward movement, and contemporary international development; the Civil War; the growth of industry and its influence on society; the Spanish-American War and the emergence of the United States as a world power. In the second semester the emphasis is on the growing interdependence of the Western nations in the twentieth century; their influence throughout the world; the participation of the United States in the World Wars and the resultant problems of today. 6 s.h. (w)

ASSISTANT PROFESSOR DURDEN

51, 52. HISTORICAL BACKGROUND OF THE WORLD TODAY.—An introductory course for sophomores, juniors, and seniors dealing with the topics indicated in the description of course 1-2. 6 s.h. (w & e)

PROFESSOR CURTISS; ASSISTANT PROFESSORS ACOMB AND COLTON; DR. HOLLYDAY, TISCHENDORF, AND YOUNG

91. THE DEVELOPMENT OF AMERICAN DEMOCRACY TO 1865.—This course is a study of trends vital to an understanding of the United States today. The main theme is the development of American democracy. Problems of foreign policy, the growth of capitalism, political practices, social behavior, and conflicting ideals are considered in relation to this main theme. 3 s.h. (w & e)

ASSOCIATE PROFESSORS HOLLEY AND WATSON; ASSISTANT PROFESSORS DECONDE, DURDEN, AND STEVENS

92. THE DEVELOPMENT OF AMERICAN DEMOCRACY, 1865 TO THE PRESENT.—A continuation of History 91 with emphasis upon the emergence of contemporary problems. 3 s.h. (w & e)

ASSOCIATE PROFESSORS HOLLEY AND WATSON; ASSISTANT PROFESSORS DECONDE, DURDEN, AND STEVENS

Courses 91 and 92 are intended both to serve as continuation courses in the study of history and to afford the student an opportunity to gain the understanding of the past of the United States essential for intelligent citizenship. These courses are prerequisite for all 100 and 200 courses in United States history, but this prerequisite may be waived for seniors by written permission of the instructor.

95, 96. ANCIENT AND MEDIEVAL HISTORY.—An introductory study of the history of mankind from preliterate man through the development of the characteristic institutions of Western Europe. The first semester considers the prehistoric tribes, the early cultures of Mesopotamia and Egypt, the religious contribution of the Hebrews, and classical Greece and Rome. The second semester deals with Europe in the Middle Ages, from Constantine to Columbus, with emphasis upon institutional and cultural development. 6 s.h. (e)

DR. YOUNG

99. NAVAL HISTORY AND ELEMENTARY STRATEGY.—After a review of earlier periods, attention is given to the rise of sea-power and its importance in more recent times and to naval actions, especially in the two World Wars. This course is not open to students who have had N.S.101. 3 s.h. (w)

ASSOCIATE PROFESSOR ROPP

105, 106. **POLITICAL AND CONSTITUTIONAL HISTORY OF ENGLAND.**—The origins and evolution of the principal institutions of the English government, related to their setting in a changing society. 6 s.h. (w) PROFESSOR HAMILTON

107, 108. **SOCIAL AND CULTURAL HISTORY OF ENGLAND.**—A study of English history from the fourteenth century to the present time in an effort to arrive at a synthesis of social and political events and thus provide a background for the study of English literature. Emphasis is placed on the ages of Chaucer, Shakespeare, and Milton; the eighteenth and early nineteenth centuries; the reign of Victoria and the twentieth century. 6 s.h. (E) ASSOCIATE PROFESSOR FERGUSON

Sophomores who made an average grade of B or above on course 1-2 or E1-2 may be admitted to this course.

109, 110. **SOCIAL AND CULTURAL HISTORY OF EARLY AMERICA, 1607-1789.**—Principal areas covered are: immigration, economic pursuits, social structure, religion, and intellectual and cultural environment. 6 s.h. (w) PROFESSOR ALDEN

111, 112. **SOCIAL AND INTELLECTUAL HISTORY OF THE U. S.**—Evolution of American life and thought from the American Revolution to the present; an examination of attitudes and practices in such fields as science, industry, law, learning and religion. Lectures and class discussions of selected readings seek to illuminate the interplay of ideas and social institutions. 6 s.h. (w)

ASSOCIATE PROFESSOR HOLLEY

113, 114. **AMERICA IN THE TWENTIETH CENTURY.**—A historical survey of political, economic, and social problems of twentieth-century United States. Emphasis is placed on reform movements from the Muckrakers through the Fair Deal, the emergence of the United States as a world power, and conflicting ideas and ideologies. 6 s.h. (w)

ASSOCIATE PROFESSOR WATSON

115, 116. **THE AGE OF ABSOLUTE MONARCHY AND THE FRENCH REVOLUTION.**—The study in the first semester deals primarily with the political and social institutions of Western Europe in the seventeenth and eighteenth centuries, including such topics as the absolute monarchy in theory and practice, the peasants, the nobles, commercial and industrial classes, the Church. The study in the second semester includes the old regime in France, the French Revolution, and Napoleonic institutions in Western Europe. 6 s.h. (E)

ASSISTANT PROFESSOR ACOMB

[Not offered in 1957-58.]

119, 120. **SOCIAL MOVEMENTS AND SOCIAL THOUGHT IN MODERN EUROPEAN HISTORY.**—A survey of movements for social reform and change from about 1750 to the present. Emphasis is placed on the effects of industrialism, the rise of trade unions, the emergence of working class political parties, and the influence of revolutionary and reformist theories. 6 s.h. (w)

[Not offered in 1957-58.]

ASSISTANT PROFESSOR COLTON

121, 122. **THE FOREIGN RELATIONS OF THE UNITED STATES.**—This course deals with American foreign policy and with the ideas and movements which have affected it as the United States rose from colonial status to world power. The origins of American foreign policy, the Monroe Doctrine, Manifest Destiny, the Civil War, and the formal conduct of diplomacy are among the major topics of the first semester. The New Imperialism, the Open Door, World War I, the League of Nations, World War II, and the Korean conflict are among the topics in the second semester. 6 s.h. (w)

ASSISTANT PROFESSOR DECONDE

127. **HISTORY OF LATIN AMERICA THROUGH THE FORMATION OF THE NATIONAL GOVERNMENTS.**—3 s.h. (w)

PROFESSOR LANNING

128. **INTER-AMERICAN AFFAIRS.**—This course treats the relations of the Latin-American states with each other and with the United States with the design of explaining the current significance of Latin America. Chief emphasis is placed upon social problems and movements common to all the republics and upon the role of the United States in Latin-American affairs, including such topics as American intervention; contributions of the United States to Latin-American life in such matters as public health; Pan-Americanism; Pan-Hispanism; foreign penetration and ideologies; the cultural and commercial aspects of the Good Neighbor Policy; Latin-American states in the World War. 3 s.h. (w)

PROFESSOR LANNING

133, 134. THE AGE OF REVOLUTIONS, 1763-1830.—The great revolutions of the closing decades of the eighteenth century and the early decades of the nineteenth. While emphasis is placed on the French Revolution and Napoleon, attention is also given to the revolutions in the New World and to the underlying intellectual movement, the Enlightenment. 6 s.h. (w) ASSISTANT PROFESSOR ACOMB

135, 136.—EUROPE IN THE TWENTIETH CENTURY.—The work in the first semester deals with the period before 1920, including such topics as international relations at the beginning of the twentieth century, the rise of German naval power, the Triple Alliance and the Triple Entente, the economic interdependence of the world, the Turkish Revolution, the Turco-Italian War and the Balkan wars, the first World War, and its immediate aftermath. In the second semester such topics are treated as the rise of totalitarian states, the disruption of world trade, and the second World War. 6 s.h. (w) ASSISTANT PROFESSOR COLTON

153, 154. THE HISTORY OF THE SOUTH.—A study, beginning in the Colonial period, of the development of the Southern part of the United States with particular attention to its distinctive characteristics and institutions and to their influence in shaping Southern attitudes toward major questions of national policy. 6 s.h. (w) PROFESSOR WOODY

161, 162. RUSSIA FROM IVAN THE TERRIBLE TO PRESENT TIMES.—Topics treated include the rise of the Russian state and its relations with Poland and Turkey; the agrarian problem and the rise of industry; the Russian Revolution; the political, agricultural, and industrial policies of the Soviet Union; the role of the U.S.S.R. in World War II; and its postwar policies. 6 s.h. (w) PROFESSOR CURTISS

167, 168. THE BACKGROUND OF MODERN EUROPEAN CIVILIZATION.—The course deals with special topics in the intellectual-cultural history of the peoples of Europe and adjacent areas from the period of the earliest written records to the formation of the European states-system (c. 1648). The work aims to develop critical appreciation and maturity of judgment in historical interpretation through the use of original sources. 6 s.h. (E) ASSOCIATE PROFESSOR NELSON

FOR SENIORS AND GRADUATES

Students may receive credit for either semester of a hyphenated course at the 200-level without taking the other semester if they obtain written permission from the instructor and either the Director of Undergraduate or the Director of Graduate Studies.

201-202. SENIOR SEMINAR IN HISTORY.—A course designed to introduce qualified students to advanced methods of historical research and writing and to the appraisal of critical historical issues. Prerequisites: History 1-2 (or 51-52), 91-92, and the consent of the instructors. Open only to seniors. This course, when taken by a history major, would be in addition to the 6 semester hours required in 200-level courses of the History Department. 6 s.h. (w)

ASSOCIATE PROFESSORS HOLLEY AND PARKER

203-204. THE UNITED STATES, 1850-1900.—The rise of sectionalism, secession, war-time problems of the Union and Confederacy, political and economic adjustments of Reconstruction, the status of the Negro, the New South, problems of capital and labor, the agrarian revolt, political parties and reform, the Spanish-American War. 6 s.h. (w) PROFESSOR WOODY

[Not offered in 1957-58.]

205-206. THE UNITED STATES IN THE TWENTIETH CENTURY.—The emergence of the United States as a major power: attention is focused on domestic developments and conflicting theories of expansion of federal power. Emphasis in the first semester is on the Progressive era and the first World War; the second semester is devoted to the twenties and to the Franklin Roosevelt administration. 6 s.h. (w) ASSOCIATE PROFESSOR WATSON

Not open to students who have had 113-114.

209-210. CONSTITUTIONAL HISTORY OF THE UNITED STATES, 1760 TO THE PRESENT.—A study of the basic problems in forming the Constitution;

of its development through the major crises in the history of the United States; of the effects of changing social, cultural, economic, and political conditions on the Constitution. 6 s.h. (w) ASSISTANT PROFESSOR STEVENS
[Not offered in 1957-58.]

213-214. THE OLD SOUTH.—Political thought and party trends from Jefferson to Calhoun; agriculture, slavery, expansion; commerce, manufacturing, transportation; urban life, religion, education; the rise of Southern nationalism. 6 s.h. (w) PROFESSOR WOODY

215-216. THE FOREIGN POLICY AND DIPLOMACY OF THE UNITED STATES.—The work in the first semester, covering the period 1775-1877, deals with such topics as the origin and development of basic foreign policies; isolation from Europe; paramount interests in Latin America, including the Monroe Doctrine; international co-operation in the Far East. The work in the second semester, covering the period since 1877, deals with topics such as the rise of the new "manifest destiny"; beginnings of American imperialism in Latin America and the Far East; the failure of traditional neutrality in the first World War; postwar conflicts between isolation and collective security; involvement in the second World War. 6 s.h. (w) PROFESSOR CLYDE

[Not offered in 1957-58.]

217, 218. EUROPE SINCE 1870.—International relations since the Franco-German War is the chief subject of study in this course; special emphasis is placed upon the underlying economic and political influences. 6 s.h. (w) PROFESSOR CARROLL

221-222. THE AGE OF THE RENAISSANCE.—The decline of characteristic features of medieval civilization and the rise of modern European institutions with particular attention to intellectual movements from Dante to Erasmus. 6 s.h. (E) ASSOCIATE PROFESSOR NELSON

225-226. THE AGE OF THE REFORMATION.—A survey of European civilization from 1500 through the Peace of Westphalia. 6 s.h. (E)
[Not offered in 1957-58.] ASSOCIATE PROFESSOR NELSON

227, 228. EUROPE IN THE NINETEENTH CENTURY.—A study, beginning with the career of Napoleon Bonaparte, of the forces and personalities influential in the nineteenth century. Emphasis in the first semester is on the problems of the biographer; in the second, on those of a student of national communities. 6 s.h. (w) ASSOCIATE PROFESSOR PARKER

231-232. THE HISPANIC COLONIES AND REPUBLICS IN AMERICA.—The development of the Iberian states as colonizing powers, the conquest of America, the Spanish treatment of the Indian, the contest between Spain and other European nations over America, the independence movement, the struggle for stable government, the rise of liberalism with special emphasis upon Mexico from the Revolution of 1910 to the present, and basic inter-American developments. 6 s.h. (w)
[Not offered in 1957-58.] PROFESSOR LANNING

233-234. THE INSTITUTIONAL, CULTURAL, AND SOCIAL HISTORY OF HISPANIC AMERICA.—The first semester of this course deals with subject races, the development of mixed breeds, the governmental system, the Church and the Inquisition, and Spanish culture with emphasis upon university subjects. In the second semester the work deals with the political ideas of the wars of independence, revolution and dictatorship, the rise of public education, public health, land reform, and proletarian movements. 6 s.h. (w) PROFESSOR LANNING

235, 236. EUROPEAN EXPANSION OVERSEAS (1415-1898). A course dealing primarily with the processes by which European institutions were carried overseas and modified in a new environment. In the first semester the emphasis is on Portuguese, Dutch, French, and English experience in the Far East and the Americas to 1763. In the second semester, attention is paid to the emergence of independent centers of European culture, as in Brazil, and to the revivals of mercantile imperialism of the new German, French, Italian and British empires of the nineteenth century. 6 s.h. (w) PROFESSOR MANCHESTER

241-242. THE FAR EAST.—The history of the Western impact on Eastern Asia in the nineteenth and twentieth centuries. Emphasis is placed on such matters as commercial and colonial expansion, the opening of China and Japan, the development by the Western Powers and Japan of colonial, imperialistic, and nationalistic interests, and the rise of Communist power in Asia. 6 s.h. (w) PROFESSOR CLYDE
[Not offered in 1957-58.]

243-244. THE UNITED STATES AND THE FAR EAST.—An historical analysis of American relations with the peoples of Eastern Asia during the nineteenth and twentieth centuries. 6 s.h. (w) PROFESSOR CLYDE

245-246. WAR IN THE MODERN WORLD.—This course is concerned with the relations between warfare and modern political, economic, and social conditions. Special attention is given to the development of British and American military methods and to the events of the American Civil War and the two World Wars. The work in the first semester deals with Clausewitz's theories of warfare and the period from the introduction of gunpowder to 1871; in the second semester there is a more detailed analysis of recent land, sea, and air warfare. 6 s.h. (w)
ASSOCIATE PROFESSOR ROPP

261-262. RUSSIA IN THE TWENTIETH CENTURY.—A study of the background of the Revolution of 1917 followed by an analysis of the history and policies of the Soviet state. 6 s.h. (w) PROFESSOR CURTISS

263-264. AMERICAN COLONIAL HISTORY AND THE REVOLUTION, 1607-1789.—The founding and institutional development of the English colonies; the background, progress, and results of the Revolution. 6 s.h. (w)
PROFESSOR ALDEN

265, 266. THE WESTWARD MOVEMENT IN THE UNITED STATES.—Settlement from the Atlantic to the Pacific and beyond; frontier problems of colonization, land systems, economy, law and government; interactions of frontier and metropolis. The first semester emphasizes the West in the colonial period, Revolution, and formation of the union; the second semester stresses sectionalism, slavery, expansion and the Civil War, the modern West, and contemporary problems. 6 s.h. (w)
ASSISTANT PROFESSOR STEVENS

267, 268. ENGLAND FROM EDWARD III TO ANNE.—The transition from medieval to modern England, the English Renaissance, and the political, social, and intellectual problems of the seventeenth century. 6 s.h. (w)
ASSOCIATE PROFESSOR FERGUSON

Not open to students who have had 107.

269. BRITISH HISTORY FROM 1714 TO 1867.—The interrelationship of the leadership of such men as Walpole, Chatham, Pitt, and Peel with war, revolution, and social institutions; the rise of the cabinet system; the Industrial Revolution; imperial changes; and reform. 3 s.h. (w) PROFESSOR HAMILTON

Not open to students who have had 105-106.

270. GREAT BRITAIN AND THE COMMONWEALTH OF NATIONS, 1867 TO THE PRESENT.—A history of Great Britain at the height of her world dominance and beyond, her oceanic empire, and the evolution of that empire into a unique world-wide Commonwealth of Nations. 3 s.h. (w) PROFESSOR HAMILTON

Not open to students who have had 105-106.

DEPARTMENTAL MAJOR

Prerequisites: The Introductory Course in History (1-2 or 51-52).

Major Requirements: Students desiring to take a major in history are required to elect 24 semester hours in the Department, including six semester hours in the senior year from courses in the 200 group. Students desiring to take the more advanced courses in American history should elect courses 91 and 92 in the sophomore or junior year.

COURSES APPROVED FOR RELATED WORK IN HISTORY

The number of courses refer to the description in the 1956-57 catalogue.

Aesthetics, Art, and Music: History of Art; History of Music

Economics, but not the courses listed under business administration and accounting except those in economic geography

Education, 83, 225, 253

English and American Literature, but not composition, speech, and drama

German, Greek, Latin, Russian, and the Romance Languages: the literature courses numbered 100 or above that are not primarily conversation or composition courses.

Greek 131

Latin 131-132

Philosophy, except 48

Political Science

Psychology, 206 only

Religion courses approved to satisfy the requirement in religion for graduation

Sociology 91, 92, 101, 243, 246 and courses groups I, II, IV, V.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

LATIN AND ROMAN STUDIES

PROFESSOR ROGERS, CHAIRMAN AND DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR ROSE, SUPERVISOR OF FRESHMAN INSTRUCTION; MR. SETTLE

Students who wish by study in English to make acquaintance with Roman antiquity from either a literary or an historical approach are afforded that opportunity through the courses in translated Latin Literature (111, 112), and Roman History (131, 132).

1-2. COURSE FOR BEGINNERS.—Forms, vocabulary, pronunciation and syntax are emphasized the first semester. They are followed by the reading and translating of Caesar's *Gallie War* the second semester. An effort is made to promote rapid development of ability to read easy Latin with satisfaction. 6 s.h. (w)

MR. SETTLE

3. CICERO'S ORATIONS.—Four orations including the *Manilian Law* and *Archias* are read, and attention is paid to prose style. Prerequisite: Latin 1-2, or equivalent. 3 s.h. (E)

MR. SETTLE

4. VERGIL'S *AENEID*.—Selections from Books I-VI, to the amount of four books or more, will be read and translated, due attention being paid to prosody. 3 s.h. (E)

MR. SETTLE

51. LATIN PROSE.—Selections from prose authors or Cicero's *De Senectute* and *De Amicitia*, or selected books of Livy's history, with special emphasis on developing competence in reading Latin. 3 s.h. (E)

THE STAFF

52. LATIN POETRY.—Selections from the greatest Latin poets, especially Horace's *Odes*. 3 s.h. (E)

THE STAFF

57. SIGHT READING IN CLASSICAL LATIN.—One period of an hour per week devoted to practice in the reading of Latin of the classical period; designed to train students to read with facility. 1 s.h. (E)

ASSOCIATE PROFESSOR ROSE

58. SIGHT READING IN MEDIAEVAL LATIN.—One period of an hour per week devoted to reading interesting mediaeval prose and poetry. Prerequisite: at least one of the following courses: Latin 3, 4, 51, 52, and 57, or an equivalent. 1 s.h. (E)

ASSOCIATE PROFESSOR ROSE

65-66. LATIN PROSE COMPOSITION.—Recommended to students who are pursuing course 3-4, 57, and 51-52, and may at the discretion of the instructor be required of such students. 4 s.h. (E)

ASSOCIATE PROFESSOR ROSE

101. TACITUS.—Interesting and historically important selections from the *Annals* or the *Histories* of Tacitus are read, with attention to the literary style and the value of the historical narrative. 3 s.h. (E) PROFESSOR ROGERS

102. JUVENAL.—Juvenal's literary satire forms the basis of the course. 3 s.h. (E) PROFESSOR ROGERS

103. CICERO.—Selections from one of the major philosophical works, with attention to Cicero's philosophical thought and literary style. 3 s.h. (E) PROFESSOR ROGERS OR ASSOCIATE PROFESSOR ROSE

104. LUCRETIUS.—A study of Lucretius as a philosophical thinker and as a poetic artist. 3 s.h. (E) PROFESSOR ROGERS OR ASSOCIATE PROFESSOR ROSE

111, 112. ROMAN LITERATURE IN ENGLISH TRANSLATION.—Selective readings in Latin Literature in English translation with emphasis on the drama, lyric poetry, and the varied contributions of Cicero to literature in the first term, and upon the epic, the satire, and the novel in the second semester. (No language credit.) 6 s.h. (E) ASSOCIATE PROFESSOR ROSE

131, 132. HISTORY OF ROME.—A survey of the history of the Roman State from its beginnings to the death of Justinian; its expansion; development of its constitution and public administration; social, legal, political and economic problems of perennial life and interest; the background and setting of Christianity's rise and growth. (This course carries no language credit. No knowledge of Latin is required for admission.) 6 s.h. (E) PROFESSOR ROGERS

211-212. ROMAN ORATORY.—A reading course in the history and development of Roman oratory, based for the most part on Cicero's *Brutus* and the *Dialogus* of Tacitus. 6 s.h. (E) PROFESSOR ROGERS

DEPARTMENTAL MAJOR

Prerequisite: Latin 1-2, 3-4, or equivalent.

Major Requirements: 24 semester hours which must include courses 51-52, 101-102, 103-104, and 6 semester hours in courses at the 200-level.

Recommended Courses: Latin 65-66, Composition, and 131-132, Roman History.

Related Work: Eighteen hours of related work, elected usually in Greek, Philosophy, Art, Romance Languages, and English. Majors who contemplate graduate work are reminded of the necessity of Greek, German, and French for such study.

MATHEMATICS

PROFESSOR GERGEN, CHAIRMAN; PROFESSOR DRESSSEL, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR HICKSON, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS CARLITZ, ELLIOTT, ROBERTS, AND THOMAS; VISITING ASSOCIATE PROFESSOR CAMPBELL; ASSISTANT PROFESSORS GALLIE AND SHOENFIELD; DRs. BRAGG, CHAK, MCLEOD, MOHAT, PINKHAM, AND WARNER; MRS. BYRNES, MR. GOODE, AND MRS. STONE; AND ASSISTANTS

The following program of courses in Mathematics is planned for 1957-58. Fall: 1, 5, 6, 50, 51, 52, 53, 111, 123, 139, 235, 271, 285, 291. Spring: 1, 5, 6, 16, 50, 51, 52, 53, 124, 131, 140, 221, 236, 272, 286, 292.

1. INTERMEDIATE ALGEBRA.—Elementary topics, factoring, fractions, linear equations in one, two and three unknowns, functions and graphs, exponents and radicals, elements of quadratic equations. Prerequisite: one unit in algebra and one unit in geometry. 3 s.h. (W & E) STAFF

5. COLLEGE ALGEBRA.—Advanced topics in quadratic equations, systems involving quadratics, variation, binomial theorem, progressions, inequalities, theory of equations, determinants, partial fractions, probability. This course and Mathematics 6 may be taken concurrently. Prerequisite: Mathematics 1, or one and one-half units in algebra and one unit in geometry. 3 s.h. (W & E) STAFF

6. PLANE TRIGONOMETRY.—Logarithms, right and oblique triangles, radian measure, graphs of trigonometric functions, inverse trigonometric functions, trigonometric identities and equations. Prerequisite: must be preceded or accompanied by Mathematics 5. 3 s.h. (w & e) STAFF

16. MATHEMATICS OF INVESTMENT.—Simple and compound interest, annuities certain, amortization, sinking funds, depreciation, evaluation of bonds, life insurance. Prerequisite: Mathematics 5. 3 s.h. (w) STAFF

50. PLANE ANALYTIC GEOMETRY.—Rectangular and polar coordinates, loci, straight lines, conic sections. This course and Mathematics 51 may be taken concurrently. Prerequisite: Mathematics 5 and 6. 3 s.h. (w) STAFF

51. CALCULUS I.—Differentiation of elementary functions, curve tracing, maxima and minima, motion, curvature, indeterminate forms. Prerequisite: must be preceded or accompanied by Mathematics 50. 3 s.h. (w) STAFF

52. CALCULUS II.—Integration of elementary functions, areas, solids of revolution, length of arc, surfaces of revolution, centroids, moments of inertia, pressure. Prerequisite: Mathematics 51. 3 s.h. (w) STAFF

53. CALCULUS III.—Introduction to solid analytic geometry, partial differentiation, multiple integrals, series, introduction to differential equations. Prerequisite: Mathematics 52. 3 s.h. (w) STAFF

111. MATHEMATICAL ANALYSIS FOR ENGINEERS.—Ordinary and partial linear differential equations with constant coefficients, Fourier series and their applications, vectors. Prerequisite: Mathematics 53. 3 s.h. (w) STAFF

123. HIGHER ALGEBRA.—The number system, mathematical induction, inequalities, series, recurring series, continued fractions, recurring continued fractions, summation of series, probability. Prerequisite: Mathematics 53. 3 s.h. (w) ASSOCIATE PROFESSOR HICKSON

124. STATISTICS.—Averages, moments, dispersion, skewness, kurtosis, correlation, types of distributions, curve fitting, graduation of data to type curves, sampling theory. Prerequisite: Mathematics 53. 3 s.h. (w) STAFF

125. ELEMENTARY THEORY OF EQUATIONS.—Permutations, determinants, matrices, linear systems, polynomials and their roots, constructibility, resultants, discriminants, simultaneous equations. Prerequisite: Mathematics 53. 3 s.h. (w) PROFESSOR THOMAS

131. ELEMENTARY DIFFERENTIAL EQUATIONS.—Solution of differential equations of elementary types; formation and integration of equations arising in applications. Prerequisite: Mathematics 52. 3 s.h. (w) STAFF

139-140. ADVANCED CALCULUS.—Multiple integrals, series, Taylor's theorem, partial differentiation, improper integrals, line integrals, Green's theorem, complex numbers. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR ELLIOTT

158. FINITE DIFFERENCES.—Operators, interpolation formulas for equal and unequal intervals, inverse interpolation, summation, differential and difference operators, approximate integration. Prerequisite: Mathematics 52. 3 s.h. (w) STAFF

160. ELEMENTARY SOLID ANALYTIC GEOMETRY.—Planes, lines, quadric surfaces. Prerequisite: Mathematics 53. 3 s.h. STAFF

175. PROBABILITY.—Permutations and combinations, total and compound probability, Bayes' theorem, Bernoulli's theorem, mathematical expectation, applications. Prerequisite: Mathematics 52. 3 s.h. (w) STAFF

FOR SENIORS AND GRADUATES

221. NUMERICAL ANALYSIS.—The electronic computer, the art of calculation, and the analysis of error. The transition from physical reality to physical abstraction, to mathematical abstraction, to numerical abstraction to a numerical computing program. Numerical function theory, theory of approximation, approximate solution of equations, and numerical calculus. Prerequisite: Mathematics 53. 3 s.h. (w) ASSISTANT PROFESSOR GALLIE

227-228. **THEORY OF NUMBERS.**—Congruences, arithmetic functions, compound moduli, quadratic reciprocity, Gauss sums, quadratic forms, sums of squares. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR CARLITZ

229-230. **ALGEBRAIC NUMBERS.**—Ideals, unique factorization, divisors of the discriminant, determination of the class number. Prerequisite: Mathematics 125. 6 s.h. (w) PROFESSOR CARLITZ

235-236. **ABSTRACT ALGEBRA.**—Groups, fields, rings, matrices, quadratic and bilinear forms, general Galois theory, hypercomplex systems. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR CARLITZ

247-248. **ARITHMETIC OF POLYNOMIALS.**—Field theory, detailed study of finite fields, special polynomials and functions, valuation theory, the zeta function. Prerequisite: Mathematics 235, or consent of the instructor. 6 s.h. (w) PROFESSOR CARLITZ

253-254. **DIFFERENTIAL GEOMETRY.**—Curves and surfaces in three dimensional Euclidean Space, applicability, differential parameters, Riemannian geometry of n -space. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR THOMAS

255-256. **PROJECTIVE GEOMETRY.**—Postulational, synthetic treatment centering around Desargues' theorem and the principle of projectivity. Conics, coordinates, order, continuity, metric properties. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR THOMAS

261-262. **MATHEMATICAL ANALYSIS FOR SOCIAL SCIENTISTS.**—A development of basis concepts in mathematics, designed for advanced students in psychology, economics and other social sciences, having as objective for the student the understanding of the mathematical method and the acquisition of technical efficiency. Particular topics considered include mathematical systems, set theory, matrices, vectors, elements of the calculus, difference equations. Prerequisite: one year of college mathematics. 6 s.h. PROFESSOR GERGEN

271-272. **INTRODUCTORY TOPOLOGY.**—Topological properties of Euclidean spaces, set-theoretic and combinatorial methods. Prerequisite: Mathematics 53. 6 s.h. (w) ASSISTANT PROFESSOR SHOENFIELD

285. **MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.**—Vectors, line and surface integrals, tensors, complex variables, differential and integral equations. Prerequisite: Mathematics 53. 3 s.h. (w) PROFESSOR DRESSEL

286. **MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.**—Wave equation, Fourier series, heat equation, telegraphic equations, Legendre polynomials, Bessel functions, Schrödinger's equation. Prerequisite: Mathematics 53. 3 s.h. (w) PROFESSOR DRESSEL

291-292. **THEORY OF FUNCTIONS.**—Limits, implicit functions, power series, double series, Cauchy's theorem and its applications, residues, Riemann surfaces, conformal mapping. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR GERGEN

DEPARTMENTAL MAJOR

For the A.B. degree:

Prerequisite: Mathematics 5 and 6.

Major and Related Work: 42 semester hours.

Major Requirements: Mathematics 50, 51, 52, 53 and 12 semester hours in courses in mathematics numbered above 100.

Related Work: 18-24 semester hours of course work, ordinarily in the following departments: chemistry, economics and business administration, philosophy, physics. For the B.S. degree:

Prerequisite: Mathematics 5 and 6.

Major and Related Work: 48 semester hours.

Major Requirements: Mathematics 50, 51, 52, 53 and 12 semester hours in courses in mathematics numbered above 100.

Related Work: 14-24 semester hours of course work in the natural sciences.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

MEDICAL SCIENCE

These courses in medical science have been approved by the Faculty Council as appropriate for the Bachelor's degree.

109. ANATOMY RELATED TO MOTION.—A course in human anatomy in which the dissection is restricted to the muscles, bone, and joints and to the circulatory and nervous systems as they are related to movement. Limited to 24 students. Lectures and laboratory. Prerequisite: Zoology 1-2. 8 s.h.

PROFESSOR MARKEE AND STAFF

203. HUMAN PHYSIOLOGY.—A course in human physiology in which the functions of all organ systems are covered. Special emphasis is given to the study of neuro-muscular and cardiovascular functions. Lectures, laboratory experiments and demonstrations, and conferences. Limited to sixteen students. Primarily for physical therapy students. Prerequisites: Chemistry 1-2 and Zoology 1-2. 6 s.h.

ASSISTANT PROFESSOR WAYLAND HULL AND STAFF

NAVAL SCIENCE

PROFESSOR BASSETT, CAPTAIN, U. S. NAVY, CHAIRMAN; ASSOCIATE PROFESSOR MALINASKY, COMMANDER U. S. NAVY, DIRECTOR OF UNDERGRADUATE STUDIES; ASSISTANT PROFESSOR KLEIN, LIEUTENANT COMMANDER U. S. NAVY, SUPERVISOR OF FRESHMAN INSTRUCTION; ASSISTANT PROFESSORS BARRY, LIEUTENANT COMMANDER U. S. NAVY, BOWEN AND MAJESKY, LIEUTENANTS, U. S. NAVY; AND ASSISTANT PROFESSOR MORRISON, MAJOR U. S. MARINE CORPS

Standardized titles and numbers for courses are established by the Bureau of Naval Personnel for use at the 52 NROTC institutions. The first digit indicates the year of the course; the second digit indicates whether semester or quarter (0 for semester, 1 for quarter); the third digit indicates the semester or quarter of school year in which offered. Specialized courses for Marine Corps officer candidates are indicated by the letter "M" after the number, and substitute for the basic course of the same number.

NS 101. NAVAL HISTORY.—History of navy regulations, naval customs and courtesies considered basic to further study of Naval Science; naval history, relating the rise and fall of sea power to other aspects of world history as a basis for understanding the role of navies in the world today. 3 s.h. (w)

COMMANDER MALINASKY; LIEUTENANT COMMANDER KLEIN

NS 102. NAVAL ORIENTATION.—Introduction to carrier, air, surface, under-sea, and amphibious warfare; basic types, characteristics, capabilities, and limitations of naval vessels; deck seamanship; naval formations and maneuvers. 3 s.h. (w)

COMMANDER MALINASKY; LIEUTENANT COMMANDER KLEIN

NS 201. NAVAL WEAPONS.—Evolution of naval ordnance; types and properties of explosives; principles in design and assembly of guns and ammunition; gun assembly types and operation, capabilities and limitations of past, present and future weapons systems; principles and use of radar and radar systems; elements and principles in the problem of control of naval weapons against air and surface targets. 3 s.h. (w)

LIEUTENANT BOWEN

NS 202. NAVAL WEAPONS.—The elements of representative gun fire control systems; principles in the mechanical and electronic solution of fire control problems; principles in the alignment and maintenance of gun batteries; organization and functions of the combat information center; naval gunfire support of amphibious operations; principles and use of anti-submarine warfare devices and systems; principles of torpedoes, mines, rockets, and guided missiles. 3 s.h. (w)

LIEUTENANT BOWEN

NS 301. NAVAL ENGINEERING.—Principles of steam engineering as related to naval installations for main propulsion and auxiliaries; future trends in naval engineering plants, ship stability and buoyancy in the practice of ship design and damage control; a general understanding of Diesel Engines. 3 s.h. (w)

LIEUTENANT COMMANDER BARRY

NS 301M. EVOLUTION OF THE ART OF WAR.—A survey of the evolution of weapons, strategy, tactics and material; illustration of the classic principles of war by a study of selected battles and campaigns; a summary of the development of U. S. military and foreign policy. 3 s.h. (w)

MAJOR MORRISON

For Marine Corps Candidates.

NS 302. NAVIGATION.—Magnetic and gyro compasses; principles of chart construction; dead reckoning; piloting; nautical astronomy including a study of the actual and apparent motion of the earth, celestial coordinates, time systems, the astronomical triangle, identification of stars and planets; solutions of observations for lines of position; complete day's work in practical navigation. 3 s.h. (w)

LIEUTENANT COMMANDER BARRY

NS 302M. MODERN BASIC STRATEGY AND TACTICS.—Modern tactical principles and techniques, especially on the small unit level, illustrated by contemporary historical examples; development of a general understanding of strategy. 3 s.h. (w)

MAJOR MORRISON

For Marine Corps Candidates.

NS 401. NAVAL OPERATIONS.—Tactics and operations including concepts of combined fleet, force, and group operations; watchstanding duties aloft; relative motion and its application to tactical maneuvering; electronic navigation; communications from ship to ship through fleet levels; Rules of the Nautical Road. 3 s.h. (w)

CAPTAIN BASSETT; LIEUTENANT MAJESKY

NS 401M. AMPHIBIOUS WARFARE.—History and development of amphibious operations and organization; analyses of amphibious operations of World War II and of the Korean action. 3 s.h. (w)

MAJOR MORRISON

For Marine Corps Candidates.

NS 402. NAVAL ADMINISTRATION.—Structure of the Navy, organization and administrative procedures; principles of personnel management; elements of military law; leadership and personal relations. 3 s.h. (w)

CAPTAIN BASSETT; LIEUTENANT MAJESKY

NS 402M. AMPHIBIOUS WARFARE, PART II.—Further study of selected amphibious operations; Uniform Code of Military Justice; leadership. 3 s.h. (w)

For Marine Corps Candidates.

MAJOR MORRISON

REQUIREMENTS FOR COMMISSION

Naval Science: 24 semester hours.

Other university courses: Completion of course requirements to qualify for a baccalaureate degree, or higher. These courses must include Math 6 (unless math through trigonometry successfully completed in secondary school); Physics 1-2 or 41-42, to be completed by the end of the sophomore year (mandatory for Regular students only). Physical training must be taken in accordance with University requirements and each student must include such instruction in swimming as to qualify him as a first class swimmer.

Summer training: Regular NROTC students must participate in three periods of training on board ship or at naval shore stations. Contract students are required to take one training cruise of about six weeks' duration, normally between the junior and senior years.

PHILOSOPHY

PROFESSOR BAYLIS, CHAIRMAN; ASSISTANT PROFESSOR CLARK, DIRECTOR OF UNDERGRADUATE STUDIES; ASSISTANT PROFESSOR WELSH, SUPERVISOR OF FRESHMAN INSTRUCTION;

PROFESSORS NEGLEY AND PATTERSON; ASSISTANT PROFESSORS BUCK AND

PEACH; VISITING ASSISTANT PROFESSOR CASTANEDA

The undergraduate program in the Department of Philosophy is designed to acquaint students with the content and the structure of philosophical theory in

various areas. Discussion is encouraged so that the student can engage actively in the philosophical examination of problems.

Course offerings fall into two general categories: the systematic and the historical. In a systematic treatment, the organization of a course is primarily in terms of the problems presented by the subject-matter of that course, as in logic, ethics, metaphysics, etc. In historical courses, attention is directed more to the order of development in the thought of a particular philosopher (Plato, Aristotle, Kant, etc.), or in a historical period. In all courses, reading of the works of philosophers will acquaint the student with the important and influential contributions to the definition and solution of philosophical issues.

The problems raised in philosophy in respect to the various fields of the arts and sciences involve questions which are not normally given attention in those particular disciplines. In the consideration of such problems, therefore, it is expected that the student will acquire some understanding and perspective of the major areas of man's intellectual endeavor. In this sense, philosophical comprehension is an essential part of a student's learning and education.

The following courses fulfill minimum uniform requirements:

Literature, Art, Music, and Philosophy (six hours required)—Philosophy 49, 91, 93, 94, 97, 98, 117.

Natural Sciences (eleven hours required)—Three of the eleven hours may be fulfilled by Philosophy 48, 103, or 104.

48. LOGIC.—A study of the conditions of effective thinking and clear communication, and of typical sources of fallacies. Examination of the basic principles of *deductive* reasoning (making explicit the implications of statements) and of *inductive* reasoning (the formulation and testing of hypotheses on the basis of experience and experiment). Emphasis on practical illustrations and applications. 3 s.h. (E & W) ASSISTANT PROFESSORS BUCK, CLARK, AND WELSH

49. ETHICS.—An introductory consideration of basic ethical concepts and principles as developed in European and American thought and culture. 3 s.h. (E & W) PROFESSORS BAYLIS AND NEGLEY; ASSISTANT PROFESSORS BUCK AND WELSH

91. INTRODUCTION TO PHILOSOPHY.—A systematic and historical examination of the major problems of knowledge, morals, and metaphysics. 3 s.h. (E & W) STAFF

93. HISTORY OF PHILOSOPHY: ANCIENT AND MEDIEVAL.—A study of the major philosophers of the period with special reference to the continuity of their thought. 3 s.h. (E & W) PROFESSOR PATTERSON; ASSISTANT PROFESSOR BUCK

94. HISTORY OF PHILOSOPHY: MODERN.—A study of the major philosophers of the period with special reference to the continuity of their thought. 3 s.h. (E & W) ASSISTANT PROFESSOR PEACH

97. POLITICAL AND SOCIAL PHILOSOPHY.—Discussion of the fundamental principles of political and social organization, with particular attention to democratic philosophy, corporate theory, and Marxist ideology. *Open only to sophomores and juniors.* 3 s.h. (W) PROFESSOR NEGLEY

98. SOCIAL IDEALS AND UTOPIAS.—Reading of selected Utopias; analysis of the value-structures and political principles of these ideal societies. 3 s.h. (W) PROFESSOR NEGLEY

101. PHILOSOPHY OF RELIGION.—A critical examination of the facts of religious experience and their bearing upon metaphysics. 3 s.h. (E) PROFESSOR PATTERSON

103. SYMBOLIC LOGIC.—Detailed analysis of deduction and of deductive systems. 3 s.h. (E) ASSISTANT PROFESSOR CLARK

104. PHILOSOPHY OF SCIENCE.—The principal philosophical and methodological problems in contemporary science. 3 s.h. (E) ASSISTANT PROFESSOR CLARK

109. INTRODUCTION TO THE PHILOSOPHY OF LANGUAGE.—Examination and discussion of such problems as the origin of language, sign-using behavior, definition, the nature of interpretation, and special uses of language: scientific, poetic, persuasive. 3 s.h. (E) ASSISTANT PROFESSOR WELSH

117. HISTORY OF ETHICS.—A survey and analysis of the ethical systems of the great philosophers. Readings in original sources. 3 s.h. (E)

ASSISTANT PROFESSOR WELSH

FOR SENIORS AND GRADUATES

202. PHILOSOPHY OF ART.—A study of some fundamental issues in aesthetics, with particular reference to the fields of literature, music, and painting. Problems discussed include: the nature and purposes of the arts; meaning in the arts; art and morality; the role of standards in art criticism; aesthetic judgment; interpretation and evaluation. 3 s.h. (E)

ASSISTANT PROFESSOR WELSH

203. CONTEMPORARY ETHICAL THEORIES.—Critical discussion and evaluation of the ethical views of twentieth century British and American philosophers. 3 s.h. (E)

PROFESSOR BAYLIS

205. THE PHILOSOPHY OF HISTORY.—Discussion of the method, metaphysical implications, and influence of interpretations of history: Hegel, Marx, Spengler, Toynbee. 3 s.h. (w)

PROFESSOR NEGLEY

208. POLITICAL PHILOSOPHY.—Analysis of the structure of social organization with particular reference to the nature of political and legal institutions. 3 s.h. (w)

PROFESSOR NEGLEY

210. PHILOSOPHY OF RELIGION.—A critical and constructive study of the nature of religion, of its various forms and manifestations, and of its functions in human life. 3 s.h. (E)

PROFESSOR PATTERSON

211. PLATO.—An examination of Plato's views with respect to knowledge, reality, and the state. 3 s.h. (E)

PROFESSOR PATTERSON

217. ARISTOTLE.—An analysis of Aristotle's views with respect to knowledge, reality, and the state. 3 s.h. (E)

PROFESSOR PATTERSON

218. MEDIEVAL PHILOSOPHY.—A study of the philosophy of the Middle Ages with special attention to selected texts from the works of Christian, Jewish and Arabian philosophers. 3 s.h. (E)

PROFESSOR PATTERSON

219. KANT.—Reading and discussion of his philosophy, with some attention to historical continuity. 3 s.h. (w)

PROFESSOR NEGLEY

220. THE POST-KANTIANS.—The development from Kant through Fichte and Schelling to Hegel; emphasis on the Hegelian dialectic and its influence on political and legal philosophy. 3 s.h. (w)

PROFESSOR NEGLEY

222. REASON AND COMMON SENSE IN 17TH AND 18TH CENTURY BRITISH THOUGHT.—Studies in the theories of reason and sentiment following Hobbes, and the development of opposition among rational, common sense and empirical theories of knowledge and conduct. Readings in Cumberland, Shaftesbury, Hutcheson, Reid and others. 3 s.h. (E)

ASSISTANT PROFESSOR PEACH

223. CONTEMPORARY PHILOSOPHY: IDEALISM.—Examination and analysis of the idealist position in recent and contemporary philosophy, with special attention to the works of F. H. Bradley and the British Idealists. 3 s.h. (E)

PROFESSOR PATTERSON

224. CONTEMPORARY PHILOSOPHY: REALISM.—A critical analysis, comparison and evaluation of the several varieties of recent realistic theories, presentative and representative. 3 s.h. (E)

PROFESSOR BAYLIS

225. BRITISH EMPIRICISM.—A critical study of the writings of Locke, Berkely, and Hume, with special emphasis on problems in the theory of knowledge. 3 s.h. (E)

ASSISTANT PROFESSOR PEACH

227. CONTINENTAL RATIONALISM.—A critical study of the writings of Descartes, Spinoza, and Leibnitz, with special emphasis on problems in the theory of knowledge and metaphysics. 3 s.h. (E)

ASSISTANT PROFESSOR PEACH

228. RECENT AND CONTEMPORARY PHILOSOPHY.—A critical study of outstanding philosophical views from Schopenhauer to the present. 3 s.h. (E)

ASSISTANT PROFESSOR PEACH

229. AMERICAN PRAGMATISM.—Studies in the philosophy of Pierce, James, Dewey, and Meade. 3 s.h. (E)
ASSISTANT PROFESSOR WELSH

232. SPECIAL PROBLEMS IN THE PHILOSOPHY OF SCIENCE.—Selected topics concerning the methods of the sciences and the philosophy of science. 3 s.h. (E)
ASSISTANT PROFESSOR CLARK

236. ORIENTAL PHILOSOPHY.—A study of the genesis of philosophical ideas in the Upanishads and the Bhagavadgita, and of the developments of the orthodox systems and of the philosophies of the Jains and Buddhists. 3 s.h. (E)
PROFESSOR PATTERSON

250. PHILOSOPHICAL ANALYSIS.—A critical study of recent and contemporary essays in philosophical analysis, and an evaluation of the nature, methods, and results of this movement. 3 s.h. (E)
PROFESSOR BAYLIS AND ASSISTANT
PROFESSOR BUCK

252. METAPHYSICS.—A critical and evaluative study of rival metaphysical theories and their bases. Analysis of the fundamental metaphysical categories and of metaphysical methods. 3 s.h. (E)
PROFESSOR BAYLIS

291, 292. CRITICAL PHILOSOPHY.—The analysis of basic philosophical concepts and beliefs with a view to critical evaluation and constructive emendation of them. Emphasis on the practice as well as the principles of philosophical criticism and problem solving. 3 s.h. each. Enrollment only by permission of the department. 291 is ordinarily prerequisite for 292. (E)

PROFESSOR BAYLIS AND THE GRADUATE STAFF

DEPARTMENTAL MAJOR

Philosophy 48 (Logic) is recommended for all those intending to major in philosophy.

Major Requirements: Twenty-four semester hours in philosophy in courses numbered above 50 including the following:

Philosophy 93 and 94.

Philosophy 117, 203, or 208.

6 semester hours in Philosophy senior-graduate courses.

Related work: Six hours minimum in each of two departments approved by the Philosophy adviser. Courses may not be those primarily open to freshmen. There is no restriction in principle as to departments in which related work may be taken, and the approval of the Philosophy adviser is required only to insure some coherence in the program of major and related work as a whole.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

PHYSICS

PROFESSOR NIELSEN, CHAIRMAN; ASSOCIATE PROFESSOR LEWIS, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSOR CARPENTER, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS GORDY, NEWSON, AND SPONER; ASSOCIATE PROFESSORS FAIRBANK AND GREULING; ASSISTANT PROFESSORS BLOCK AND WILLIAMSON; VISITING ASSISTANT PROFESSORS BUCKINGHAM AND DUNCAN; DR. BERNSTEIN; AND ASSISTANTS

A student wishing to major in physics should arrange to complete the necessary mathematics as soon as possible.

1-2. INTRODUCTORY PHYSICS.—This course traces historically and experimentally the development of the important principles of physics. This course is open to freshmen, sophomores and juniors and meets the general science requirement. Three hours of recitation and one two-hour laboratory each week. 8 s.h. (w)
PROFESSORS CARPENTER AND NIELSEN; AND ASSISTANTS

41-42. GENERAL PHYSICS.—This course treats the basic principles of general physics in a more quantitative manner than Physics 1-2. It meets in a thorough way the physics requirement for entrance into the study of either medicine or engineering, and is well suited for the general science student. This course is not

open for credit for students who have completed Physics 1-2. Three lecture-recitations and one three hour laboratory period each week. Prerequisites: Mathematics 5-6 or equivalent (Mathematics 5-6 may be taken concurrently). 8 s.h. (w)

PROFESSOR CARPENTER, ASSISTANT PROFESSOR WILLIAMSON,
AND STAFF AND ASSISTANTS

75. MODERN PHYSICS.—The elements of atomic and nuclear physics. Kinetic theory, relativity, quantum theory, spectra, x-rays, radio-activity, cosmic rays. Prerequisites: Physics 1-2, or Physics 41-42, or equivalent; a course in differential calculus which may be taken concurrently. 3 s.h. (w)

ASSOCIATE PROFESSOR FAIRBANK

125. INTERMEDIATE PHYSICS—MECHANICS.—The course covers in a thorough manner the elements of mechanics. Three recitations per week. Prerequisites: Physics 1-2 or 41-42 or equivalent, and a course in differential and integral calculus. 3 s.h. (w)

PROFESSOR NIELSEN

126. INTERMEDIATE PHYSICS—ELECTRICITY.—The elements of electricity and magnetism. Three lectures and one three-hour laboratory per week. Prerequisites: Physics 125 or equivalent work approved by the instructor, and differential and integral calculus. 4 s.h. (w)

ASSOCIATE PROFESSOR GREULING

176. INTERMEDIATE PHYSICS—THERMODYNAMICS AND KINETIC THEORY.—The elements of thermodynamics and kinetic theory and elementary statistical mechanics. Three recitations per week. Prerequisites: Physics 125 or equivalent work approved by the instructor, and differential and integral calculus. 3 s.h. (w)

PROFESSOR NEWSON

A course in general college physics, Physics 125 and 126 or equivalent validated by examination, and a course in differential and integral calculus are prerequisites to all courses numbered 200 and above.

201-202. MECHANICS.—The fundamental principles of statics and the dynamics of particles and rigid bodies. Three recitations each week. 6 s.h. (w)

ASSISTANT PROFESSOR BLOCK

213-214. CONTEMPORARY PHYSICS.—A course which covers the fundamental concepts and the experimental basis of modern physics. Three lectures each week. 6 s.h. (w)

ASSOCIATE PROFESSOR LEWIS

217-218. ADVANCED PHYSICS LABORATORY.—Measurements involving the fields of mechanics, electricity, magnetism, heat, sound, optics and modern physics. 2-6 s.h. (w)

THE STAFF

219. ELECTRICITY AND MAGNETISM.—Fundamentals of electricity and magnetism. Physical optics. Electromagnetic waves. 3 s.h. (w)

ASSOCIATE PROFESSOR LEWIS

220. ELECTRON TUBE CIRCUITS.—Linear circuit analysis, rectifiers, filters, linear amplifiers, feedback, noise, power amplifiers, oscillators, modulation, relaxation oscillators. 4 s.h. (w)

ASSOCIATE PROFESSOR LEWIS

225-226. ELEMENTARY INVESTIGATIONS.—The aim of this course is to provide training in the laboratory and library methods of physical research. Properly qualified students may conduct elementary investigations under the supervision of a member of the staff. 3-6 s.h. (w)

THE STAFF

DEPARTMENTAL MAJOR

A. For the A.B. degree:

Prerequisites: Physics 1-2 or 41-42 or equivalent, and Mathematics 5-6.

Major Requirements: Eighteen to 24 semester hours in physics including Physics 75, 125, 126 and 176 or equivalent.

Related Work: Eighteen to 24 semester hours from the following courses: Mathematics 51, 52, 53 and 131, and Chemistry 1-2.

B. For the B.S. degree:

Prerequisites: Physics 1-2 or 41-42 or equivalent, and Mathematics 5-6 or equivalent.

Major Requirements: Twenty-four to 34 semester hours in physics including Physics 75, 125, 126 and 176 or equivalent.

Related Work: Fourteen to 24 semester hours from the following courses: Mathematics 51, 52, 53 and 131, and Chemistry 1-2.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

POLITICAL SCIENCE

PROFESSOR RANKIN, CHAIRMAN; PROFESSOR HALLOWELL, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSORS COLE, CONNERY AND WILSON; LECTURER ELLIS; ASSOCIATE PROFESSORS BRAIBANTI AND SIMPSON; ASSISTANT PROFESSORS CHEEK, HALL, HANSON AND LEACH; MESSRS. CLUTE AND SECOR

The general objective of the Department of Political Science is to acquaint students with the theory and practice of government and politics at the local, state, national and international levels. While primary attention is focused upon the American political and administrative system, emphasis is also placed upon a comparative study of the political institutions and movements of thought peculiar to the nations of Europe, Latin America and the Far East. The student's attention is also directed to the problems encountered in international organization, politics and law. The development of political theories from Plato to the present day is an essential part of the department's course offerings. Methods of study include the descriptive, the historical, the legal, the comparative and the philosophical.

Directing its effort to an intelligent understanding of the contemporary world and of the responsibilities which are laid upon citizens of a democracy, the Department of Political Science shares the general objectives of a liberal arts education. While the department does not aim at vocational education, the knowledge it seeks to impart should be useful to anyone contemplating a career in the government service or politics.

Students intending to major in the department should take Political Science 11-12 or 61-62. No student may take more than one of these two courses for credit. Ordinarily one of them must be taken before proceeding to more advanced work in the department. This rule may be waived with the consent of the instructor giving the advanced course.

The advanced courses are divided into three major groups but no sequence of courses beyond the introductory course is prescribed. The student would be well advised, however, to select some courses from each group.

The Senior Seminars are designed to provide an opportunity for majors in the department to pursue independent study and research.

INTRODUCTORY COURSES

11-12. THE AMERICAN SYSTEM OF GOVERNMENT.—An introductory study of the principles and operation of the American government in the light of the present world position of the United States. The first semester is devoted to institutions and politics of the American government; the second semester to such issues as civil liberties, American foreign policies and government policy toward agriculture, labor and business. (Only open to Freshmen.) 6 s.h. (E & W)

ASSISTANT PROFESSOR HALL

[Students who complete 11 in the spring semester should thereafter take course 62 instead of 12.]

61-62. AMERICAN AND COMPARATIVE POLITICAL SYSTEMS.—Principles and institutions of modern government, the first semester being devoted to American government, the second to a comparative study of governments in the United States and outside. 6 s.h. (E & W)

ASSOCIATE PROFESSOR SIMPSON; ASSISTANT PROFESSORS
CHEEK, HALL, HANSON AND LEACH

[Not open to freshmen or to students who have had courses 11-12 or 63-64.]

71. GOVERNMENT IN THE UNITED STATES.—Lecture and reading course recommended but not required for all students taking course 61. Open only to students enrolled in 61 and to sophomores who passed 11 in their freshman year. 1 s.h.
 PROFESSOR CONNERY AND SENIOR STAFF

72. COMPARATIVE GOVERNMENT.—Lecture and reading course recommended but not required for all students taking course 62. Open only to students enrolled in 62 and to sophomores who passed 11 in their freshman year. 1 s.h.
 PROFESSOR CONNERY AND SENIOR STAFF

POLITICAL THEORY AND COMPARATIVE GOVERNMENT

123. INTRODUCTION TO POLITICAL PHILOSOPHY.—A course devoted to the reading and discussion of selected political classics including Plato's *Republic*, Aristotle's *Ethics* and *Politics* and other works as time permits. 3 s.h. (w)
 PROFESSOR HALLOWELL AND ASSISTANT PROFESSOR LEACH

133. THE POLITICS OF SOUTHEAST ASIA.—An analysis of the development of government in Thailand, Vietnam, Burma, Malaya, Indonesia and the Philippines. Attention will be given to the Islamic, Buddhist and other indigenous cultures of these nations as well as to the colonial administrations of the Netherlands, France, Britain, and the United States. Emphasis will be on the problems involved in the emergence of various constitutional forms in these nations with the advent of independent statehood. 3 s.h.
 ASSOCIATE PROFESSOR BRAIBANTI

136. MAJOR EUROPEAN GOVERNMENTS.—A general introductory survey of the governments of Great Britain, France, Germany, Italy, and the Soviet Union. Special attention is given to constitutional developments, the organization and ideologies of political parties, and current political problems. 3 s.h. (w)
 PROFESSOR COLE

151. GOVERNMENTS AND POLITICS OF MEXICO AND THE CARIBBEAN AREA.—A study of their contemporary governments, political problems and international relations. 3 s.h. (w)
 DR. ELLIS

152. THE GOVERNMENTS AND POLITICS OF SOUTH AMERICA.—The constitutional development, governmental organization, inter-American co-operation and political problems of the principal South American states. 3 s.h. (w)
 DR. ELLIS

211. POLITICAL INSTITUTIONS OF THE FAR EAST.—An analysis of the ideas underlying the development of government in Japan, China, and Korea. Study of the writings of Lao-tse, Confucius and the sacred books of Buddhism and Shinto. Particular attention is given to the theory of Confucian bureaucracy, the Taikwa Reform, the development of the Tokugawa administrative state, the constitutional reforms of Sun Yat-sen in China and of the Meiji Era in Japan. 3 s.h. (w)
 ASSOCIATE PROFESSOR BRAIBANTI

223. POLITICAL THOUGHT TO THE SEVENTEENTH CENTURY.—A survey from the time of Plato to the close of the seventeenth century; Graeco-Roman, Patristic and Germanic thought; individualism and cosmopolitanism; effect of the Church-State controversy and the conciliar movement; medieval constitutionalism; legislative sovereignty. 3 s.h. (w)
 PROFESSORS WILSON AND HALLOWELL

224. MODERN POLITICAL THEORY.—An historical survey and philosophical analysis of political theory from the beginning of the seventeenth to the middle of the nineteenth century. Attention is given to the rise of liberalism, the Age of Enlightenment, the romantic and conservative reaction, idealism and utilitarianism. 3 s.h. (w)
 PROFESSOR HALLOWELL

225. COMPARATIVE GOVERNMENT.—A comparative study of modern political institutions and processes, with particular attention to European constitutional government and politics. 3 s.h. (w)
 PROFESSOR COLE

226. COMPARATIVE GOVERNMENT.—A comparative study of modern political institutions and processes, with particular attention to European totalitarian and authoritarian political systems. 3 s.h. (w)
 PROFESSOR COLE

229. RECENT AND CONTEMPORARY POLITICAL THEORY.—The rise of positivism and its impact upon modern political thought, the origins of socialism, Marxism and its variants, socialism in the Soviet Union, nationalism, Fascism and National Socialism, the crisis in modern democracy, Christianity and the social order. 3 s.h. (w) PROFESSOR HALLOWELL

231. AMERICAN POLITICAL THEORY.—An analysis of the main currents in American political thought from colonial beginnings to the present day, with emphasis upon the development of liberalism in America. 3 s.h. (w) PROFESSOR HALLOWELL

235. THE BRITISH COMMONWEALTH.—An analysis of the political relationships between the members of the Commonwealth and a comparative study of the governments of the Commonwealth countries, with particular reference to Canada. 3 s.h. (w) PROFESSOR COLE

271. SOCIOPOLITICS AND CAPITALISM.—Labor and labor policies in Western Europe and the United States in the nineteenth and twentieth centuries; the development of monopoly power and political power of labor in recent decades. 3 s.h. (w)

AMERICAN GOVERNMENT AND PUBLIC ADMINISTRATION

125. AMERICAN POLITICAL PARTIES AND PRACTICAL POLITICS.—A study of the historical development, organization, and methods of political parties in the United States. 3 s.h. (w) ASSOCIATE PROFESSOR SIMPSON

128. POLITICAL BEHAVIOR AND THE AMERICAN VOTER.—An analysis of the factors influencing Democratic, Republican, and independent voting behavior, citizen participation in elections, and the conduct of political campaigns. Emphasis will be placed upon the behavioral approach to political science. 3 s.h. (w)

141. PUBLIC ADMINISTRATION.—An introduction to the role of administration in the governmental process considering principles of administrative organization, methods of administrative control, personnel and fiscal management. In general the study of the organizational and administrative problems encountered by any government agency charged with carrying out a public policy. 3 s.h. (w)

ASSISTANT PROFESSOR HALL

146. LEGISLATION.—A study of the composition and structures of legislative bodies and of the legislative process with attention to procedure, methods, techniques, delegation of discretion, and the use of controls. 3 s.h. (w)

ASSOCIATE PROFESSOR SIMPSON

161. GOVERNMENT AND PLANNING.—A study of special areas in government planning. The semester's work is divided into three parts: city planning—land use and zoning, housing and urban redevelopment; resource planning—the governmental problems involved in planning for the conservation and use of natural resources, with special attention given to multi-purpose development of the river and its watershed, and a brief consideration of proposals and developments in the general field of economic planning. 3 s.h. (w)

ASSISTANT PROFESSOR HANSON

164. GOVERNMENT CONTROL OF THE SOCIAL AND ECONOMIC ORDER.—A study of governmental and administrative problems in the regulation of trade and the enforcement of the anti-trust laws, the regulation of transportation and communications and the role of the government in collective bargaining. Consideration is also given to the philosophic aspects of the general growth of government control of industry. 3 s.h. (w)

ASSISTANT PROFESSOR HANSON

174. POLITICS AND ECONOMICS.—An analysis of the influence of politically dominant forces and ideologies upon economic policies and of economics upon politics in societies of principal Western countries since the seventeenth century. 3 s.h. (w)

190. PUBLIC PERSONNEL ADMINISTRATION.—Principles, techniques, problems, and functions of government personnel administration; formal and informal organization for personnel management; comparison of public employment philoso-

phies, policies and services with general personnel management, including recruitment, promotion, training, classification, morale and discipline, compensation, and retirement of public employees. 3 s.h. (E) ASSISTANT PROFESSOR CHEEK

191. STATE AND LOCAL GOVERNMENT TODAY.—Problems in state, county and city government including the administration of government services such as education, public welfare, law enforcement; inter-governmental relationships; administrative reorganization; methods of popular control; and the reconstruction of state and local government so as to meet present-day needs. 3 s.h. (E) ASSISTANT PROFESSOR CHEEK

207. AMERICAN CONSTITUTIONAL LAW AND THEORY.—A study of leading principles of American government, as developed through judicial interpretation of the Constitution. 3 s.h. (w) PROFESSOR RANKIN

209. PROBLEMS IN STATE AND LOCAL GOVERNMENT IN THE UNITED STATES.—A study of the historical development of state and local governments, their present organization and subdivisions, and their relation to each other. Special attention is given to the position of the states in the federal union through the study of federal-state, inter-state, and state-local relations. 3 s.h. (w) PROFESSOR RANKIN

230. AMERICAN POLITICAL INSTITUTIONS.—A study of the formation and development of institutions of the national government in the United States, with historical and analytical treatment. Among other topics this course is concerned with the Constitutional Convention of 1787, and the development of Congress, the Presidency, and the Supreme Court. 3 s.h. (w) PROFESSOR RANKIN

234. CIVIL-MILITARY RELATIONSHIPS IN AMERICAN GOVERNMENT.—A consideration of the role of the military in American government both in theory and in practice. Special emphasis will be given to formal civil-military structural arrangements for determining policies, such as the National Security Council, and to the degree of civilian control within the military establishment. 3 s.h. (w) PROFESSOR CONNERY

241. ADMINISTRATIVE MANAGEMENT.—An advanced course in public administration with special attention being given to the development of scientific management, its application to government in the United States and a consideration of current problems in organization, procedures, work simplification, and management improvement. 3 s.h. (w) PROFESSOR CONNERY

242. NATIONAL ADMINISTRATION.—A study of the administrative organization, working concepts and procedures of the United States Government, illustrated through the operations of the Bureau of the Budget. 3 s.h. (w) PROFESSOR CONNERY

246. GOVERNMENT ADMINISTRATION AND PUBLIC POLICY.—Through use of the laboratory and case study techniques, a consideration of the types of administrative problems that the United States Government encounters in the field of public policy, and their possible solution. 3 s.h. (w) PROFESSOR CONNERY

291. PROBLEMS OF MUNICIPAL GOVERNMENT.—An analysis of problems relating to the structural system and activities of municipalities in the United States. 3 s.h. (w) PROFESSOR RANKIN

292. MUNICIPAL ADMINISTRATION.—A study of principles and methods relating to municipal administration in the United States. 3 s.h. (w) PROFESSOR RANKIN

INTERNATIONAL LAW AND RELATIONS

121. ELEMENTS OF INTERNATIONAL RELATIONS.—Analysis of international politics, of the foundations of national power, and of international co-operation, with emphasis upon attempted solutions of the central problems of international security. 3 s.h. (w) DR. ELLIS

122. MODERN INTERNATIONAL POLITICS.—A survey of politics leading to the two World Wars with emphasis upon present day conditions resulting from these major conflicts. 3 s.h. (w) DR. ELLIS

Students who have received credit for History 135-136 may not receive credit for this course.

131. SURVEY OF FAR EASTERN POLITICS.—An introductory survey of international politics in Eastern Asia and the Western Pacific; the rise of Japan as a modern state; China's struggle for political unity, independence and national development. 3 s.h. (Formerly Political Science 111) (w)

DR. ELLIS AND ASSOCIATE PROFESSOR BRAIBANTI

132. CONTEMPORARY PROBLEMS IN FAR EASTERN POLITICS.—The impact of World War II and its aftermath on political institutions and economic structures in the Pacific area. 3 s.h. (Formerly Political Science 112) (w)

DR. ELLIS AND ASSOCIATE PROFESSOR BRAIBANTI

158. CONTROL OF AMERICAN FOREIGN POLICY.—A consideration of the forces which are responsible for the formulation of American foreign policy, and a study of the important factors which have influenced contemporary United States policy in the major areas of the world. The course includes an analysis of the respective roles of the President, Congress, Department of State, and the United Nations, as well as military and public opinion. 3 s.h. (w)

212. INTERNATIONAL POLITICS OF THE FAR EAST.—An analysis of the relations of China, Japan and Korea *inter se* and with outside powers, with emphasis upon changing power relationships within the Asian cultural sphere. 3 s.h. (w)

ASSOCIATE PROFESSOR BRAIBANTI

221. INTERNATIONAL PUBLIC ORGANIZATION.—A study of the structure and functioning of the United Nations organs, of related specialized agencies such as the International Labor Organization, and of regional agencies such as the Organization of American States. 3 s.h. (w)

PROFESSOR WILSON

227-228. INTERNATIONAL LAW.—Elements of international law, particularly as interpreted and applied by the United States; rights and duties of states with respect to recognition, state territory and jurisdiction, nationality, diplomatic and consular relations, treaties, treatment of aliens, pacific settlement of disputes, international regulation of the use of force, and collective security. 6 s.h. (w)

PROFESSOR WILSON

UNDERGRADUATE SEMINARS

201. SENIOR SEMINAR IN POLITICAL SCIENCE.—A seminar intended primarily for majors in Political Science, devoted to the reading, discussion and analysis of major works in modern and contemporary political science. Students are expected to prepare papers on relevant topics for group discussions. Open only to seniors. Prerequisite: consent of the instructor. 3 s.h. (w)

PROFESSOR HALLOWELL

202. SENIOR SEMINAR IN POLITICAL SCIENCE.—Intended primarily for majors in Political Science, this seminar provides an opportunity for the application of principles to current political problems. It provides a means whereby specially qualified students can make a concentrated study of some problem of their own choice. Papers are required and special attention is given to research methods and materials. Political Science 201 is recommended but not required. Open only to seniors. Prerequisite: consent of the instructor. 3 s.h. (w)

PROFESSOR CONNERY

DEPARTMENTAL MAJOR

Prerequisite: Political Science 11-12 or 61-62.

Major Requirements: Eighteen semester hours of work in the Department above courses 11-12 or 61-62, including at least six semester hours of Senior-Graduate courses.

Related Work: Six hours each in two departments approved by the Political Science adviser. Courses may not be those primarily open to freshmen. Usually related work is taken in the Departments of History, Economics, Sociology, or Philosophy.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

PSYCHOLOGY

PROFESSOR RODNICK, CHAIRMAN; ASSOCIATE PROFESSOR KIMBLE, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSORS ADAMS, DAI, KOCH, KUDER, AND ZENER; ASSOCIATE PROFESSORS BANHAM, COHEN, GARMEZY, AND LODGE; ASSISTANT PROFESSORS BORSTELMANN, GUTTMAN, JONES, MCHUGH, PARSONS, REICHENBERG-HACKETT, SPIELBERGER AND WILSON; VISITING ASSISTANT PROFESSOR ZAHN; LECTURER STRONG

Three or six semester hours in psychology may be used to meet the Social Science and History requirement for the A.B. degree. The courses which will meet the requirement are: Psychology 91 or Psychology 91 plus either Psychology 100 or 101.

Psychology 91 or its equivalent is a prerequisite for all other courses in psychology. Six semester hours in psychology (including Psychology 91) or special permission of the course instructor or the director of undergraduate studies are required for admission to Psychology 144, 145, 148, 206, 212, 215, 229, 230, and 236.

91. **INTRODUCTORY PSYCHOLOGY.**—An introduction to the facts, principles, and problems of normal adult psychology through a study of psychological methods as applied to motivation, emotions, perception, sensation, thinking, memory, learning, individual differences, and personality. 3 s.h. (E & W) STAFF

100. **PERSONALITY AND SOCIAL BEHAVIOR.**—A survey of basic psychological principles underlying the study of personality in relation to the social environment. Among the topics discussed are theories of personality, the process of socialization of the individual, factors influencing adjustment to the social environment, the interaction of culture and personality. 3 s.h. (E)

PROFESSOR ADAMS, ASSISTANT PROFESSORS JONES AND REICHENBERG-HACKETT

101. **INTRODUCTORY SOCIAL PSYCHOLOGY.**—A survey of problems, concepts and methods in the study of social relations and group behavior. Topics to be discussed include: Psychological and socio-cultural factors in the development of motives, values and attitudes; the study of small-group behavior with emphasis on social influence and communication; prejudice and stereotypy. 3 s.h. (E & W)

PROFESSOR ADAMS, ASSISTANT PROFESSORS JONES AND MCHUGH

104. **COMPARATIVE PSYCHOLOGY.**—An examination of the bearing upon general psychological theory of experimental investigations of animal behavior in the fields of motivation and learning. 3 s.h. (E)

[Not offered in 1956-57.]

106. **ABNORMAL PSYCHOLOGY.**—A systematic presentation of the psychology of functional mental disorders with emphasis on its bearing upon general psychological theory. 3 s.h. (E)

ASSOCIATE PROFESSOR COHEN AND ASSISTANT PROFESSOR PARSONS

110. **APPLIED PSYCHOLOGY.**—Applications of psychology to problems of personnel selection, industrial efficiency, advertising and selling, and other problems of practical interest. 3 s.h. (E)

ASSISTANT PROFESSOR MCHUGH

111. **ADVANCED GENERAL PSYCHOLOGY.**—A more intensive study of several selected problem areas in the field of general psychology with special emphasis on experimental methods and findings in the areas considered. 3 s.h. (E)

[Not offered in 1956-57.]

116. **PSYCHOLOGY OF ADJUSTMENT.**—The course is planned to give an adequate understanding of problems of adjustment and mental hygiene. Lectures and discussions cover an application of the principles and findings of normal and abnormal psychology as these relate to the adjustment of the average individual in our changing society; a survey of the principles of mental hygiene; discussions of current socio-cultural trends significant for individual adjustment. 3 s.h. (E)

ASSISTANT PROFESSOR REICHENBERG-HACKETT

Not open to students who have had Education 68.

117-118. EXPERIMENTAL AND STATISTICAL METHODS IN PSYCHOLOGY.—Study of the procedures and methods of psychological investigation through emphasis on human and animal experimentation in such areas as learning, motivation and perception. Instruction in elementary statistical techniques and their application to the analysis and interpretation of psychological data. Experiments are arranged in a sequence of increasing complexity with respect to subject matter, experimental design and statistical methods. Laboratory and lectures. 8 s.h. (E)
ASSISTANT PROFESSORS GUTTMAN AND WILSON

121. CHILD PSYCHOLOGY.—A detailed study of the practical problems of infancy and early childhood, with special emphasis upon learning, emotional development, social adjustment, and modern conceptions and methods of child training and guidance. 3 s.h. (E)
ASSISTANT PROFESSOR MCHUGH

Not open to students who have had Education 118.

122. ADJUSTMENT OF THE PRE-SCHOOL CHILD.—Study and application of techniques of observing, recording and interpreting the behavior of the pre-school child. The course is designed to meet the needs of students interested in the personality, development and social adjustment of children; to train them in techniques of observing and interpreting the physical, emotional, and intellectual development of the individual child; the role of each child within the social structure of a play group, and a study of the development of group integration. One hour lecture and 4 hours laboratory. 3 s.h. (E)

ASSISTANT PROFESSOR REICHENBERG-HACKETT

126. ADOLESCENT PSYCHOLOGY.—The mental, social, and emotional development of adolescence and youth will be studied, with special attention given to such topics as interests, motivations, home problems, sex differences, recreation, delinquency, and development for citizenship. Prerequisite: Psychology 121 or Education 118. 3 s.h. (E)

ASSISTANT PROFESSOR MCHUGH

130. PRINCIPLES AND METHODS OF PSYCHOLOGICAL EVALUATION.—This is an introductory course in test methods used by psychologists in measuring and evaluating mental processes. The nature, purposes and utilization of various types of tests and psychological techniques will be discussed and demonstrated. Among the tests to be studied will be standard scales of intelligence, verbal and performance, individual and group methods; tests of special abilities, aptitudes, attitudes and interests; personality tests, rating scales and projective methods. 3 s.h. (E)

ASSOCIATE PROFESSOR BANHAM

132. THE PSYCHOLOGY OF INDIVIDUAL DIFFERENCES.—A study of the nature and causes of individual and group variations in intelligence, special abilities, social and emotional characteristics. These will be considered in relation to developmental sequence, aging factors, sex, race, biological inheritance, education and socio-economic conditions. 3 s.h. (E)

ASSOCIATE PROFESSOR BANHAM

141. PERSONALITY AND BEHAVIOR DISORDER.—Behavior disorder studied from the viewpoint of the psychological principles underlying the adjustment of the deviant personality. 3 s.h. (E)

[Not offered in 1956-57.]

144. LEARNING AND MOTIVATION.—A survey of the basic facts and principles of human and animal learning and motivation. Topics covered include conditioning, trial and error learning, insightful learning, primary and secondary motivation, the relationship between motivation and learning and cultural variations in motives. Students in the course will perform a series of representative experiments. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

ASSOCIATE PROFESSOR KIMBLE

145. EXPERIMENTAL APPROACHES TO PERSONALITY.—Experimental methods applied to personality research with emphasis upon psychological studies in such areas as anxiety, conflict and frustration. Students will perform a series of representative experiments. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

ASSOCIATE PROFESSOR GARMIZY AND ASSISTANT PROFESSOR JONES

146. EXPERIMENTAL PSYCHOLOGY IN INDUSTRY AND ENGINEERING.—Applications of psychological principles to the solution of problems in industry and engineering. Topics covered include visual and auditory communication, visibility and legibility, visual display, control design, machine design, motivational and learning factors influencing production. Representative studies will be reviewed. Students in the course will perform several pertinent experiments. 3 s.h. (E)

ASSISTANT PROFESSOR WILSON

148. PSYCHOLOGY OF PERCEPTION AND THINKING.—A study of the basic phenomena of perception and thinking as determined by the stimulus situation, motivation, learning and personality variables. Students will perform a series of representative experiments. Prerequisites: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

PROFESSOR ZENER

206. SOCIAL PSYCHOLOGY.—An examination of general methodology and selected research areas in social psychology including social perception, socialization, prejudice and the behavioral effects of communication, interaction and influence. 3 s.h. (E)

ASSISTANT PROFESSOR JONES

212. PHYSIOLOGICAL PSYCHOLOGY.—A survey of the interrelationships of biological and psychological factors in behavior, with particular reference to reflex action, motivation, learning and emotion. Emphasis will be placed on the relation between psychological theories and biological data. Presupposes Introductory Zoology or its equivalent. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

ASSISTANT PROFESSOR GUTTMAN

215. DEVELOPMENTAL PSYCHOLOGY.—Theory of personality structure and the changes it undergoes in development from infancy to old age, learning, conflict, character, intelligence, developmental crises, etc.; evaluation of researches on personality dynamics. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

PROFESSOR ADAMS

229, 230. INTRODUCTION TO RESEARCH.—A senior research seminar for advanced students. The student conducts an original investigation under staff supervision. A formal written report of the study will be required. Group discussions of significant research areas. Prerequisites: Participation by departmental invitation only; restricted to senior majors who have maintained a B average in all psychology courses. Students graduating with distinction in psychology will be selected from among registrants in this course. 6 s.h. (E)

ASSOCIATE PROFESSOR KIMBLE;

ASSISTANT PROFESSOR JONES

236. THEORETICAL PSYCHOLOGY.—This course will be devoted to the analysis of techniques of theory construction in psychology. The discussion of these methodological issues will be coordinated with the analysis of concrete formulations in contemporary psychological theory. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

PROFESSOR KOCH

242 and Education 242. MEASUREMENT OF APTITUDES, INTEREST AND ACHIEVEMENT.—A study of the theories and principles of psychological measurement as applied to aptitude, interest and achievement testing. Prerequisite: 12 hours of psychology or educational psychology (6 hours of which may be taken concurrently). 3 s.h.

PROFESSOR KUDER

DEPARTMENTAL MAJOR

Prerequisite: Psychology 91 or equivalent.

Major Requirements: 24 semester hours in psychology including: Psychology 91, 117-118; at least one course selected from Psychology 144, 145, and 148; at least one 200 level course.

Related Work: 18 semester hours of related work which usually includes courses in zoology and sociology or anthropology. Additional selected courses in chemistry,

economics, education, mathematics, philosophy and physics which may meet the minor requirement must have the approval of the director or undergraduate studies.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

RELIGION

PROFESSOR MYERS, CHAIRMAN; ASSOCIATE PROFESSOR PHILLIPS, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSOR CRUM; ASSOCIATE PROFESSOR PRICE; ASSISTANT PROFESSORS BRADLEY, MANSCHRECK AND SALES; DRs. DANIELS AND OSBORN; MESSRS. BROWN AND LANGFORD

The uniform course requirements in Religion may be fulfilled by completing six semester hours in any of the following courses: 1, 2, 51, 52, 91, 94, 101, 103, 104, 114, 130, 132, 135, 181, 182.

Specific prerequisites are indicated in the descriptions of some courses. Where prerequisites are stated in terms of Bible hours, any one of the following will satisfy a 3 semester hour prerequisite and any two, a 6 semester hour prerequisite: 1, 2, 51, 52, 101, 103, 104, 114.

1. THE ENGLISH BIBLE.—A survey of the contents of the Old Testament books in the light of their origin in the history and religion of the Hebrew people. 3 s.h. (E & W)

PROFESSOR CRUM; ASSISTANT PROFESSOR MANSCHRECK;
DRs. DANIELS AND OSBORN; MESSRS.
BROWN AND LANGFORD

2. THE ENGLISH BIBLE.—A study of the personalities and literature of the New Testament against their Jewish, Hellenistic and Roman background. Although Religion 1 is not a prerequisite, it will be an aid to the student to complete 1 before taking 2. 3 s.h. (E & W)

PROFESSORS CRUM AND MYERS; ASSISTANT PROFESSORS
MANSCHRECK AND SALES; DRs. DANIELS AND
OSBORN; MR. LANGFORD

51. THE ENGLISH BIBLE.—An introductory course in the Old Testament for sophomores and juniors. (See description of Religion 1.) Students may not receive credit for both 51 and 1. 3 s.h. (E & W)

PROFESSOR MYERS; ASSOCIATE PROFESSOR PHILLIPS;
ASSISTANT PROFESSORS BRADLEY AND MANSCHRECK;
DRs. DANIELS AND OSBORN; MR. LANGFORD

52. THE ENGLISH BIBLE.—A survey course in New Testament life and literature for sophomores and juniors. (See description of Religion 2.) It will be to the advantage of the student to take Religion 1 or 51 before taking 52. Students may not receive credit for both 52 and 2. 3 s.h. (E & W)

PROFESSOR MYERS; ASSOCIATE PROFESSOR PHILLIPS;
ASSISTANT PROFESSORS BRADLEY AND MANSCHRECK;
DRs. DANIELS AND OSBORN; MR. LANGFORD

91. AN INTRODUCTION TO CHRISTIAN ETHICS.—A study of the theistic interpretation of man's moral experience, based upon the world-view of the Bible, as contrasted with other classical and contemporary moral philosophies. In the survey of the ethical religion of the Bible special attention is given to the Hebrew prophets, to Jesus and the Apostle Paul. 3 s.h. (W)

DR. OSBORN

94. THE BEGINNINGS OF THE CHRISTIAN CHURCH.—A study of the development of Christianity in the first two hundred years. Special emphasis will be given to the work of Paul, the later New Testament writings, the *Apostolic Fathers* and the early Apologists. Prerequisite: Religion 2 or 52. 3 s.h. (W)

ASSISTANT PROFESSOR SALES

101. THE SOCIAL TEACHINGS OF THE PROPHETS AND JESUS.—A study of the social teachings of the Old Testament prophets and of the social ideas of Jesus as they appear in the four gospels. Not open for credit to students who take Religion 103 or 114. Either semester. 3 s.h. (W)

ASSOCIATE PROFESSOR PHILLIPS

103. THE PROPHETS OF THE OLD TESTAMENT.—In this course a study is made of the history and nature of prophecy, with particular attention being given to the messages of the outstanding pre-exilic literary prophets. Students may not receive credit for both 103 and 107 or 103 and 101. 3 s.h. (E & W)

PROFESSOR MYERS; ASSISTANT PROFESSOR SALES

104. JUDAISM FROM THE EXILE TO THE FALL OF JERUSALEM IN 135 A.D.—A study of post-exilic Judaism: the prophetic and apocalyptic developments of normative Judaism. 3 s.h. (W)

ASSISTANT PROFESSOR SALES

107. THE GREAT PROPHETS OF ISRAEL.—Special consideration will be given to the times and messages of Amos, Hosea, Isaiah, Jeremiah and Ezekiel. An effort will be made to appraise their contributions to literature, ethics, and faith. Some attention will be given to the relevance of prophetic religion for the present. Prerequisites: Religion 1, 2 or 51, 52 or equivalent. Students may not receive credit for both 103 and 107. 3 s.h.

PROFESSORS MYERS

114. THE LIFE AND TEACHINGS OF JESUS.—This course considers the period in which Jesus lived, the record of his life, and the meaning of his teachings as recorded in the Synoptic Gospels. Students may not receive credit for 114 and 101; or 114 and 116. 3 s.h. (E & W)

PROFESSOR MYERS; ASSISTANT PROFESSOR BRADLEY;
DRS. DANIELS AND OSBORN

116. THE MISSION AND MESSAGE OF JESUS.—An intensive study analyzing and interpreting the Gospel records of Jesus' career, with emphasis upon their significance for the Christian religion. Students will be expected to select and make reports on particular projects. Prerequisites: Religion 1, 2 or 51, 52 or equivalent. Students may not receive credit for both 114 and 116. 3 s.h. (W)

ASSOCIATE PROFESSOR PRICE; DR. DANIELS

130. CHRISTIAN ETHICS IN HISTORY AND MODERN LIFE.—A historical study of how Christians from New Testament times to the present have interpreted and expressed their ethical convictions. The aim of the course will be to provide historical depth for evaluating contemporary ethical issues. Prerequisite: Religion 91 or 3 s.h. of Bible. 3 s.h.

ASSISTANT PROFESSOR MANSCHRECK

132. THE CHRISTIAN AND CONTEMPORARY SOCIAL PROBLEMS.—A critique of some basic ideas of modern man as they affect ethical decisions. Special consideration will be given to problems of the social and economic structures of society, war and race. The aim of the course will be to encourage personal evaluation—using pertinent Biblical teachings and the views of contemporary writers as a basis for judgment. Prerequisite: Religion 91 or 3 s.h. of Bible. 3 s.h.

ASSOCIATE PROFESSORS PHILLIPS AND PRICE;
ASSISTANT PROFESSOR MANSCHRECK

134. CONTEMPORARY RELIGIONS IN THE UNITED STATES.—A study of Judaism, Catholicism and Protestantism with reference to each faith's distinctive beliefs and practices; and a comparison of common and dissimilar features. 3 s.h. (W)

ASSOCIATE PROFESSOR PHILLIPS

135. CHRISTIAN BIOGRAPHY.—A study of Christianity in the lives and writings of a few key persons, for example, Augustine, Francis of Assisi, Luther, and Wesley. The aim of the course is to present the central stream of the development of Christian thought and practice through the study of men who were significant in their own times and whose ideas are relevant to an understanding of current Christianity. Prerequisite: 3 s.h. of Bible. 3 s.h.

ASSISTANT PROFESSOR MANSCHRECK

169. CHARACTER PROBLEMS.—The psychology of adolescence and the problems of youth in character building, with attention to the character education agencies in local communities. 3 s.h. (E & W)

PROFESSOR CRUM

170. RELIGION AND THE FAMILY.—A study of marriage and American home life with emphasis upon ethical and religious aspects. Not open to students who take Sociology 250. 3 s.h. (E & W)

PROFESSOR CRUM

181. **THE RELIGIOUS ENVIRONMENT OF THE BIBLICAL WORLD.**—After a brief introduction to the nature and early development of religion, the history and literature of the religions of the ancient Near East are surveyed. Special attention is given to the cultures of Egypt, Mesopotamia, Babylonia, Persia, Palestine, and Greece. 3 s.h. ASSISTANT PROFESSOR BRADLEY

182. **SURVEY OF THE WORLD'S GREAT RELIGIONS.**—The world's living religions are dealt with in terms of the historical development and the beliefs, practices and contemporary significance of each. Prerequisite: 3 s.h. of Bible. 3 s.h. ASSISTANT PROFESSOR BRADLEY

185. **THE NEGRO IN THE RELIGIOUS LIFE OF AMERICA.**—An examination of the ways in which the Christian Church has attempted to apply the Christian ethic to race relations with attention to the ethical aspects of these relations in American life and culture. 3 s.h. PROFESSOR CRUM

192. **CHRISTIAN BELIEFS.**—An introductory study of the nature, significance and contemporary relevance of some of the important Christian beliefs. Prerequisite: 3 semester hours of Bible. 3 s.h. (E) ASSISTANT PROFESSOR BRADLEY

The following courses offered in the Divinity School may be taken by undergraduates:

103 (DS)-104 (DS). **HELLENISTIC GREEK.**—Designed for beginners to enable them to read the Greek of the New Testament. 6 s.h. MR. BROWN

201 (DS)-202 (DS). **FIRST HEBREW.**—The principles and structure of the Hebrew language with translation of selected Old Testament narratives. 6 s.h. PROFESSOR STINESPRING

207 (DS)-208 (DS). **SECOND HEBREW.**—II. Samuel in the first semester and Quamram Isaiah Scroll in the second. 6 s.h. ASSISTANT PROFESSOR BROWNLEE

DEPARTMENTAL MAJOR

Prerequisite: Religion 1-2 or 51-52.

Major Requirements: A major in the Department of Religion consists of 18 semester hours of work, exclusive of the introductory course, selected with the approval of the instructor under whose supervision the student does his major work. Six of the 18 semester hours must be in courses with biblical content.

Related Work: This is usually twenty-four semester hours, in courses that relate to the educational needs of the student. In general, it includes six semester hours in philosophy, psychology, and sociology. Other courses may be chosen from the offerings in art, education, English literature, health education, Greek, history, Latin and political science.

ROMANCE LANGUAGES

PROFESSOR JORDAN, CHAIRMAN; ASSOCIATE PROFESSOR DOW, DIRECTOR OF UNDERGRADUATE STUDIES IN FRENCH; PROFESSOR DAVIS, DIRECTOR OF UNDERGRADUATE STUDIES IN SPANISH; ASSISTANT PROFESSOR CORDLE, SUPERVISOR OF FRESHMAN STUDIES IN FRENCH; ASSOCIATE PROFESSOR FEIN, SUPERVISOR OF FRESHMAN STUDIES IN SPANISH; PROFESSORS CASTELLANO, PREDMORE, AND WALTON; ASSISTANT PROFESSORS GRANT, TORRE, AND VINCENT; DRS. AUBERY, MILLER, WALKER; MESSRS. BARLOW, BLANCHARD, FLINT, HARDEE, KAPLAN, STIRES, WATKINS; MMES BRYAN, CASTELLANO, DOW, GILLETTE, HARTH

French 51-52 and Spanish 65-66 are the prerequisites for all elective courses. Some preparation in courses of the 100 level is prerequisite to election of courses above 200, except by special authorization of the department.

Students who, by reason of foreign residence, have had special opportunities in French or Spanish must be classified by the Director of Undergraduate Studies.

FRENCH

1-2. **ELEMENTARY FRENCH.**—Introduction to simple conversational patterns, elements of grammar, graded readings. 6 s.h. (E & W)

ASSISTANT PROFESSOR GRANT AND STAFF

3-4 **INTERMEDIATE FRENCH.**—The progressive development of skills in speaking, understanding, and reading. Prerequisite: French 1-2 or two years of high-school French. 6 s.h. (E & W)

ASSOCIATE PROFESSOR DOW AND STAFF

51-52. **INTRODUCTION TO FRENCH LITERATURE.**—Readings from representative French authors. Development of skill in rapid reading correlated with discussion in French of content and ideas. Prerequisite: French 3-4 or equivalent. 6 s.h. (E & W)

PROFESSOR WALTON AND STAFF

55. **INTERMEDIATE CONVERSATION.**—To be taken concurrently with French 51, except by departmental permission. Enrollment limited to 10 students per section. Recommended for prospective French majors. 1 s.h. (E) Mrs. Dow

56. **INTERMEDIATE CONVERSATION.**—Prerequisite: French 55. To be taken concurrently with French 52. 1 s.h. (E) Mrs. Dow

105. **FRENCH COMEDY FROM MEDIEVAL FARCE TO BEAUMARCHAIS.**—A study of the comic theater from the beginnings to eighteenth century satire, with special consideration of Molière. The course will trace the development of the French theatrical tradition, with its commentary on human nature and the contemporary scene. 3 s.h. (W)

DR. WALKER

108. **THE FRENCH ROMANTIC MOVEMENT.**—The impact of the modern world on the French thinkers and great poets of the early nineteenth century. Readings from Rousseau; the eyewitness testimony of Chateaubriand; the lyric poetry of Lamartine, Vigny, Musset, and Hugo. 3 s.h. (W)

ASSISTANT PROFESSOR GRANT

111. **FRENCH DRAMA OF THE NINETEENTH CENTURY.**—A survey of the French theater from the romantic period to the *Théâtre libre*. 3 s.h. (E)

ASSOCIATE PROFESSOR DOW

112. **FRENCH DRAMA OF THE TWENTIETH CENTURY.**—Reading of representative plays selected from the works of Bernstein, Maeterlinck, Romain, Sarmant, Vildrac, J.-J. Bernard, Claudel, Lenormand, Pagnol, Giraudoux, and Anouilh. 3 s.h. (E)

ASSOCIATE PROFESSOR DOW

117. **PHONETICS.**—This course is designed to satisfy the needs of majors and advanced students who wish to acquire greater accuracy in pronunciation and to examine its importance in the appreciation of literary texts. It involves a detailed review of French sounds, practice in phonetic transcriptions, tape recordings for corrective purposes, and an introduction to French diction. 3 s.h. (E)

MR. WATKINS

128. **ADVANCED COMPOSITION AND CONVERSATION.**—This course will maintain constant drill in the conversational idiom, along with exercises in free composition. Prerequisite: French 117 or consent of the instructor. 3 s.h. (E)

MRS. DOW

134. **CONTEMPORARY FRENCH LIFE AND THOUGHT.**—An introduction to the essential currents in French thought since 1885. Representative literary works are used as a basis for analysis and discussion of the contemporary scene. 3 s.h. (W)

ASSISTANT PROFESSOR CORDLE

213. **FRENCH CLASSICISM.**—Its initial phase. Readings from Malherbe, Molière, Racine, Boileau, La Fontaine, La Rochefoucauld, Madame de Sévigné, La Bruyère, and others. 3 s.h. (E)

PROFESSOR WALTON

214. **FRENCH CLASSICISM.**—Its final phase. Readings from Fontenelle, Saint-Simon, Abbé Prévost, Marivaux, Lesage, Montesquieu, Voltaire, and others. 3 s.h. (E)

PROFESSOR WALTON

215, 216. THE MODERN FRENCH NOVEL.—A survey of the novel form from the seventeenth to the twentieth century, with particular attention to the analysis of fundamental literary tendencies; classicism, rationalism, and realism. 6 s.h. (E)

PROFESSOR JORDAN

219, 220. OLD FRENCH LANGUAGE AND LITERATURE.—Reading and discussion of representative texts of the Medieval Period accompanied by a study of the evolution of the language. 6 s.h. (E)

ASSISTANT PROFESSOR VINCENT

227. FRENCH POETRY SINCE THÉOPHILE GAUTIER.—Readings from the principal figures of the Parnassian and Symbolist movements, including Baudelaire, Leconte de Lisle, Heredia, Verlaine, Rimbaud, Mallarmé, Régnier. 3 s.h. (E)

PROFESSOR WALTON

238. ANATOLE FRANCE.—Analysis of the principal phases of his work and its relation to the French tradition. Reading of his poetry, *Le Crime de Sylvestre Bonnard*, *Thaïs*, *Le Jardin d'Epicure*, *Les Dieux ont soif*, *Le Lys Rouge*, *L'Île des Pingouins*, part of *La Vie Littéraire*. 3 s.h. (E)

PROFESSOR WALTON

SPANISH

1-2. ELEMENTARY SPANISH.—Introduction to simple conversational patterns, elements of grammar, graded readings. 6 s.h. (E & W)

ASSOCIATE PROFESSOR FEIN AND STAFF

3-4. INTERMEDIATE SPANISH.—Progressive development of skills in speaking, understanding, and reading. Prerequisite: Spanish 1-2 or two years of high-school Spanish. 6 s.h. (E & W)

PROFESSOR PREDMORE AND STAFF

65-66. INTRODUCTION TO SPANISH LITERATURE.—Readings from representative Spanish authors. Development of skill in rapid reading correlated with discussion in Spanish of content and ideas. Prerequisite: Spanish 3-4 or equivalent. 6 s.h. (E & W)

PROFESSOR CASTELLANO AND STAFF

68. INTRODUCTION TO SPANISH AMERICAN LITERATURE.—Readings from representative Spanish American authors. Development of skill in rapid reading correlated with discussion in Spanish of content and ideas. This course is offered sometimes as an alternate to Spanish 66 and is accepted in fulfillment of major and graduation requirements. 6 s.h. (E & W)

PROFESSOR CASTELLANO AND STAFF

71. INTERMEDIATE CONVERSATION.—To be taken concurrently with Spanish 65, except by departmental permission. Enrollment limited to 10 students per section. Recommended for prospective Spanish majors. 1 s.h. (E)

MRS. CASTELLANO

72. INTERMEDIATE CONVERSATION.—Prerequisite: Spanish 71. To be taken concurrently with Spanish 66 or 68. 1 s.h. (E)

MRS. CASTELLANO

155. REPRESENTATIVE WRITERS OF SPANISH AMERICAN LITERATURE.—Reading and discussion of major works which illustrate literary trends from the early Colonial period to 1880. 3 s.h. (E)

ASSOCIATE PROFESSOR FEIN

156. REPRESENTATIVE WRITERS OF SPANISH AMERICAN LITERATURE.—Study of works which are examples of the principal literary currents after 1880, with particular reference to their relationship to social ideas and problems in the same period. 3 s.h. (E)

ASSOCIATE PROFESSOR FEIN

161. SPANISH LITERATURE: OLDER PERIOD.—Reading and interpretation of representative Spanish writers from the beginnings through the Golden Age. 3 s.h. (E)

DR. MILLER

162. SPANISH LITERATURE: MODERN PERIOD.—Reading and interpretation of representative writers from Romanticism to the present. 3 s.h. (E)

ASSISTANT PROFESSOR TORRE

167. THE SPANISH ROMANTIC MOVEMENT.—A study of the romantic spirit, especially in the drama and lyric poetry of the first half of the nineteenth century. 3 s.h. (E)

MR. FLINT

173. ADVANCED CONVERSATION.—One hour a week will be devoted to a review of the elements of syntax. The remainder of the course aims to develop facility of expression through constant drill on vocabulary and conversational idiom. Prerequisite: Spanish 66 (or 68) and 71-72, or permission. 3 s.h. (E)

PROFESSOR CASTELLANO

174. PHONETICS AND DICTION.—This course is intended to round out the students' oral experience, with emphasis on accurate pronunciation. Use is made of phonographic demonstrations and corrective exercises, with individual recordings. Prerequisite: Spanish 173, or permission. 3 s.h. (E)

PROFESSOR CASTELLANO

255. MODERN LATIN AMERICAN LITERATURE.—The coming of age of Latin American literature in the nineteenth and twentieth centuries, with particular attention to the Modernist movement. 3 s.h. (E)

ASSOCIATE PROFESSOR FEIN

256. CONTEMPORARY LATIN AMERICAN LITERATURE.—Trends in Latin American Literature after the Modernist movement. Analysis of significant works in various genres. 3 s.h. (E)

ASSOCIATE PROFESSOR FEIN

257. OLD SPANISH LANGUAGE.—The historical development of the language together with illustrative readings. 3 s.h. (E)

PROFESSOR DAVIS

258. OLD SPANISH LITERATURE.—The literature of the Middle Ages and the early Renaissance. 3 s.h. (E)

PROFESSOR DAVIS

260. ADVANCED COMPOSITION AND SYNTAX.—Study of fundamental difficulties in the language; practice in writing idiomatic Spanish; exercises in free composition. For students who have a satisfactory command of Spanish grammar and fair conversational ability. Prerequisites: Spanish 173, 174, or permission. 3 s.h. (E)

PROFESSOR CASTELLANO

261. NINETEENTH CENTURY NOVEL.—A study of literary and social trends in the last half of the nineteenth century. Readings will be selected from the novels of Valera, Pereda, Galdós, Pardo Bazán, Blasco Ibáñez, and their contemporaries. 3 s.h. (E)

PROFESSOR DAVIS

264. MODERN AND CONTEMPORARY SPANISH THEATRE.—A brief review of the modern and contemporary Spanish theatre from the period of Romanticism. Lectures, reading, and discussion of the most representative works of Benavente, Martínez Sierra, los hermanos Quintero, etc. 3 s.h. (E)

PROFESSOR CASTELLANO

265. GOLDEN AGE LITERATURE: CERVANTES.—The life and thought of Cervantes with special emphasis on his *Quijote*. 3 s.h. (E)

PROFESSOR PREDMORE

266. GOLDEN AGE LITERATURE: THE DRAMA.—Study of the chief Spanish dramatists of the seventeenth century with readings of representative plays of this period. 3 s.h. (E)

PROFESSOR CASTELLANO

270. THE SPANISH LANGUAGE IN AMERICA.—Development of the Spanish language from the time of the Discovery to the present. 3 s.h. PROFESSOR PREDMORE

275. CONTEMPORARY SPANISH LITERATURE. ESSAY AND LYRIC POETRY.—A study of the revision of national values and literary expression in the twentieth century with particular reference to the crisis of 1898 and to the enrichment of the Spanish tradition through extrapeninsular influences. 3 s.h. (E)

PROFESSOR PREDMORE

276. CONTEMPORARY SPANISH LITERATURE: NOVEL.—A study of tradition and innovation in the twentieth century Spanish novel and emphasis on the novels of Unamuno, Baroja, Valle Inclán, and Pérez de Ayala. 3 s.h. (E)

PROFESSOR PREDMORE

THE TEACHING OF ROMANCE LANGUAGES

RL218. THE TEACHING OF ROMANCE LANGUAGES.—Evaluation of objectives and methods; a study of the practical problems involved in teaching these languages on the elementary, secondary, and college level; analysis of textbooks, special foreign language programs, audio-visual aids; critical examination of modern techniques in written and oral testing. 3 s.h.

ASSOCIATE PROFESSOR DOW

DUKE UNIVERSITY
DEPARTMENTAL MAJOR

Prerequisites:

For French: French 51-52 (combined with 55-56), or equivalent.

For Spanish: Spanish 65-66 (combined with 71-72), or equivalent.

Major Requirements:

For French: Eighteen semester hours of work must be completed in courses numbered above 100 and must include: (a) six semester hours in course 117, 128; (b) six semester hours of literature in courses 213 to 238.

For Spanish: Eighteen semester hours of work must be completed in courses numbered above 100 and must include: (a) six semester hours of linguistic training (courses 173, 174, 260); (b) six semester hours of literature in courses numbered above 200.

RELATED WORK

Majors in Romance Languages will normally take the prescribed amount of related work in the following fields: (1) other foreign languages and literature; (2) aesthetics; (3) history and appreciation courses in music and art; (4) philosophy; (5) general psychology; (6) history; (7) general sociology and anthropology.

Majors in Spanish may take a maximum of six hours of Spanish American political science or economics if taken with or after Spanish 155, 156.

RUSSIAN

ASSISTANT PROFESSOR WINNER AND VISITING ASSISTANT PROFESSOR NEBEL

51-52. INTRODUCTION TO THE RUSSIAN LANGUAGE.—Open to freshmen with the approval of the Dean. 6 s.h. (w)

ASSISTANT PROFESSORS WINNER AND NEBEL

53-54. INTERMEDIATE RUSSIAN LANGUAGE.—Prerequisite: Russian 51-52 or equivalent. 6 s.h. (w)

ASSISTANT PROFESSORS WINNER AND NEBEL

101, 102. RUSSIAN CULTURE AND LITERATURE THROUGH THE NINETEENTH CENTURY.—After a brief survey from earliest times through eighteenth-century classicism, enlightenment, and sentimentalism, attention is focused on the literature of the nineteenth century, and the development of romanticism and of the realistic school. Special attention is given to the works of Pushkin, Lermontov, Gogol, Goncharov, Turgenev, Tolstoi, Dostoevsky, and Gorki. Readings are assigned in English translation. 6 s.h. (w)

ASSISTANT PROFESSORS WINNER AND NEBEL

103. AN INTRODUCTION TO SOVIET LITERATURE AND CULTURE.—An analysis of the development of Russian literature and culture since the Bolshevik revolution and the effect of Soviet policy on the literary production of the time. A survey of the important literary currents from Gorki and Mayakovski through Sholokhov. Lectures and class discussion. Readings will be assigned in English translation. 3 s.h. (E)

ASSISTANT PROFESSOR WINNER

[Not offered in 1957-58.]

105. HISTORY OF THE RUSSIAN THEATRE AND DRAMA.—A discussion of the most significant stages of Russian dramatic art from the earliest primitive harvest ceremonies to the development of theatrical realism and naturalism in the end of the nineteenth century and the development of the dramatic arts in the Soviet Union is combined with a study of the development of the Russian theatre, with special emphasis on such figures as Stanislavski, Meierholdt, Vakhtangov, etc. Class discussion and visual demonstrations. Readings are assigned in English translation. 3 s.h. (w)

ASSISTANT PROFESSOR WINNER

[Not offered in 1957-58.]

112. PUSHKIN AND THE BIRTH OF RUSSIAN REALISM.—A study of Pushkin and his contemporaries from the point of view of their relationship to the development of the Russian romantic movement and to the emergence of an independent Russian realistic approach to literature. An analysis of the influence of Western literary figures, particularly Byron, on the development of Russian

letters of the early nineteenth century. Readings are assigned in English translation. Prerequisite: Russian 101 or consent of the instructor. 3 s.h. (w)

[Not offered in 1957-58.]

ASSISTANT PROFESSORS WINNER AND NEBEL

201, 202. THE NOVELISTS OF NINETEENTH CENTURY RUSSIA.—The principal writers discussed are Pushkin, Lermontov, Gogol, Goncharov, Saltykov-Shehedrin, Turgenev, Dostoevsky and Tolstoy. Discussion of the main cultural events of the period. Attention is given to the literary relations between Russia and the West. Extensive readings in English translation. Lectures, oral reports and term paper each semester. A knowledge of Russian is not required. 6 s.h. (w)

ASSISTANT PROFESSOR WINNER

SOCIOLOGY AND ANTHROPOLOGY

PROFESSOR JENSEN, CHAIRMAN; ASSOCIATE PROFESSOR SCHETTTLER, DIRECTOR OF UNDERGRADUATE STUDIES, AND SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS HART AND THOMPSON; ASSOCIATE PROFESSOR LABARRE; ASSISTANT PROFESSORS WHITRIDGE AND ROY; DRs. HOWELL AND MCNURLEN, AND MISS BERSON

91-92. GENERAL SOCIOLOGY.—An introduction to the scientific study of social life; its origin, evolution and organization as illustrated in the study of a number of concrete social problems. 6 s.h. (E & W)

PROFESSOR JENSEN; ASSOCIATE PROFESSOR SCHETTTLER;
ASSISTANT PROFESSORS ROY AND WHITRIDGE;
DRs. HOWELL AND MCNURLEN
AND MISS BERSON

101. GENERAL SOCIOLOGY.—A more intensive version of course 91-92, which enables the student to complete the introductory course in sociology in one semester. 5 s.h. (w)

ASSISTANT PROFESSOR ROY

I. ANTHROPOLOGY

93. GENERAL ANTHROPOLOGY.—Origins and distribution of the races of mankind; a survey of human palaeontology and human biology, world archaeology, prehistory and languages; and the origins of the family, primitive economics, arts, social and political organization. Special attention is given to primitive peoples. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

94. CULTURAL ANTHROPOLOGY.—A study of the dynamics of culture, the causal factors, functions, integration and disintegration, diffusion, growth and change of cultures. Emphasis is upon the simpler societies. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

103. PEOPLES OF THE WORLD: AMERICAN INDIAN.—A comprehensive survey of the Indians of North and South America, including a study of origins and prehistory, archaeology, physical anthropology, languages, material culture, social and political organization, economics and religion, discussed in terms of the "culture area" concept, and illustrated with the ethnography of a characteristic tribe from each area. 3 s.h. (w)

[Not offered in 1957-58.]

ASSOCIATE PROFESSOR LABARRE

105. PEOPLES OF THE WORLD: AFRICA, ASIA, AND OCEANIA.—A comprehensive survey of non-European peoples of the Old World, covering available prehistory, archaeology, racial affiliations, languages, material culture, social and political organization, economics and religion, discussed in terms of the "cultural area" concept, and illustrated with the ethnography of a characteristic tribe from each area. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

212. PRIMITIVE RELIGION.—The ethnography, the social functions and the socio-psychological meanings of religion in primitive societies. Prerequisite: course 91-92, or 101, or 93 or 94. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

213. PERSONALITY AND SOCIETY.—The sociology and social psychology of human personality, its origins in the primary group, its nature and varieties, and

its integrations into secondary group institutions, with emphasis upon the normal personality and its adjustments in our society and to our culture. Prerequisite: course 91-92, or 101, or 93 or 94. 3 s.h. (w) ASSOCIATE PROFESSOR LABARRE

214. PERSONALITY AND CULTURE.—The influence of culture patterns and social institutions on character structure, socialization of the individual and the dynamics of human personality. Comparative anthropological materials will be drawn upon. Prerequisite: course 213. 3 s.h. (w) ASSOCIATE PROFESSOR LABARRE

II. COMMUNITY, RACE AND CULTURE

(Courses 91-92, or 101, or 93, or 94 prerequisite for all courses.)

133. SOCIOLOGY OF THE SOUTH.—The developing regional organization of the world economy studied with especial reference to Southern life and problems. A survey of the composition and distribution of population, races and race relations; economic conditions underlying population, race factors and culture of the South. Primary emphasis is upon social change and its control. 3 s.h. (w)

PROFESSOR THOMPSON

134. HUMAN ECOLOGY.—A study of the human community in its competitive and cooperative aspects. 3 s.h. (w)

PROFESSOR THOMPSON

[Not offered in 1957-58.]

137. THE NEGRO IN AMERICA.—A study of the history and changing status of the Negro regarded as a symbol and protagonist of minority groups in America and elsewhere. 3 s.h. (w)

PROFESSOR THOMPSON

233. RURAL SOCIOLOGY.—The sociology of the land; peasant and folk societies and cultures; patterns of rural settlement like the farm, the plantation, the ranch and others; rural personality types; the changing character of rural life; rural problems. 3 s.h. (w)

PROFESSOR THOMPSON

[Not offered in 1957-58.]

235. URBAN SOCIOLOGY.—A study of the city and civilization, the newspaper, the social survey, the slum and housing, neighborhoods and natural areas, urban institutions, urban problems, and city planning. 3 s.h. (w)

PROFESSOR THOMPSON

237. COMMUNITY AND SOCIETY.—This course seeks to provide a frame of reference for the analysis and ordering of facts pertaining to the diverse cultures of the world, the State, the world community, the Great Society, news, mass behavior, social problems, races and classes. 3 s.h. (w)

PROFESSOR THOMPSON

238. RACE AND CULTURE.—A study of the nature of race and of the relationships and problems of race. 3 s.h. (w)

PROFESSOR THOMPSON

262. EDUCATION AND THE CULTURAL PROCESS.—A study of education (1) as carried on traditionally among preliterate and folk peoples, and (2) as it becomes a problem in racially and culturally complex societies like that of the United States. 3 s.h. (w)

PROFESSOR THOMPSON

III. COLLECTIVE BEHAVIOR

(Courses 91-92, or 101, or 93 or 94 prerequisite for all courses.)

142. THE SOCIOLOGY OF DISCUSSION.—A course designed to develop practical social skills in intellectual cooperation. In the light of sociological theory of intellectual conflict, competition and cooperation, practice will be provided in the group solution of problems through committees, conferences and forums, and in the discussion processes whereby cooperation can be substituted for social antagonism. Prerequisites: either Sociology 91, 101, or 93, or 94 and six hours to be selected from history, political science, Economics 105 and 155, and Education 115 and 176. Enrollment limited to a maximum of 30. 3 s.h. (w)

PROFESSOR HART

149. INTRODUCTION TO CHILD WELFARE.—A study of heredity and environment as factors in personality development: infant conservation; welfare responsibilities of the school, emphasizing the physical and mental well-being of the child, play, and compulsory and industrial education; child labor, diagnosis and treatment of delinquency; care of the dependent and neglected child; child-caring agencies, public and private; and a community program of child welfare. 3 s.h. (w)

PROFESSOR HART

243. **SOCIAL ATTITUDES AND COLLECTIVE BEHAVIOR.**—Study of attitudes as products of social interaction; organization of attitudes into personal behavior patterns; expression of social attitudes in social, political and industrial groups; social unrest and the behavior of crowds and mobs; analysis of social movements, strikes, revolutions, and other group organizations. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTTLER

245. **THE SOCIOLOGY OF PERSONALITY DISORGANIZATION AND ADJUSTMENT.**—A sociological approach to the disorganization of personality with special emphasis upon the personality maladjustments resulting from different types of social situations, and the sociological techniques of personality reorganization and adjustment. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTTLER

[Not offered in 1957-1958.]

246. **PUBLIC OPINION AND PROPAGANDA.**—Nature and development of public opinion; relation to attitude, biases, stereotypes and controversial issues; role of leaders, pressure groups and minority groups; use of radio, press, motion picture and graphic arts; propaganda and censorship; measurements of public opinion. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTTLER

248. **PRESSURE GROUPS AND PUBLIC RELATIONS.**—A study of the nature and activities of pressure group organizations in the fields of business, industry, politics, education, religion, patriotism, etc., that seek to influence public opinion, with especial attention being given to the roles and functions of public relations counsellors and lobbyists. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTTLER

[Not offered in 1957-1958.]

250. **MARRIAGE AND THE FAMILY.**—An analysis of contemporary marriage and family experience with emphasis on its functions, problems, resources and values. Not open to students who have received credit for Religion 170. 3 s.h. (w)

PROFESSOR HART

IV. SOCIAL ORGANIZATION AND DISORGANIZATION

(Courses 91-92, or 101, or 93, or 94 prerequisite for all courses.)

153. **The FIELDS OF SOCIAL WORK.**—A non-professional course, designed to acquaint the student with the types of problems existing in both rural and urban communities which can be dealt with in a remedial and preventive way; how they arise in the reciprocal interaction of personality and culture, what their effects are in terms of personal and social disorganization, how communities are organized to deal with them, and social agencies which have been developed to deal with problems of each type, together with an evaluation of effectiveness of the techniques employed. 3 s.h. (ε)

ASSISTANT PROFESSOR WHITRIDGE

157. **SOCIAL CHANGE AND SOCIAL CONTROL.**—Basic nature of inventions as related to ideological and material factors; role of the inventor, reformer, and non-conformist; mobility, diversification and individualism as by-products of social change; techniques of social control in the family, school, church, industry and government; social planning and leadership in a dynamic society. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTTLER

158. **SOCIOLOGY OF THE PROFESSIONS AND OCCUPATIONS.**—Analysis of the professional and occupational structure of the American economy; shifts and trends in occupations and professions for men, women and minority groups; social and economic characteristics of occupational and professional groups; factors in the selection of a profession or occupation; sources of information about occupations and professions; measurements of aptitudes, abilities and skills; employer-employee relationships. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTTLER

165. **INTRODUCTION TO INDUSTRIAL SOCIOLOGY.**—An analysis and appraisal of the various factors that affect human relations in industry. It will deal with the interpersonal and intergroup relationships within the individual industrial unit which determine its efficiency as an economic and social institution; the social relationships of workers with one another and with management; their influence upon productivity, the relations of the worker toward the job, labor turnover, absenteeism, etc., and the social conditions in the community, housing, family life; recreation, etc., as they affect the social relations within the industrial community. 3 s.h. (w)

ASSISTANT PROFESSOR ROY

166. **INDUSTRY AND SOCIETY.**—A study of industrial institutions in their interrelationships with other forms of social behavior in the broad cultural setting of western civilization. The emphasis in this course will be on an examination of the influence of changes in the technical and social organization of industry upon community organization, social stratification, social mobility, social interaction, and personality development. Attention will center upon analysis of specific social problems resulting from the impact of industrial change. 3 s.h. (w)

ASSISTANT PROFESSOR ROY

261. **PROBLEMS IN INDUSTRIAL SOCIOLOGY.**—Analysis of human relations problems that confront administrators of industrial institutions and leaders in community life. In this course emphasis falls on the examination of concrete case materials and appraisal of published research with consideration of possibilities for further development of scientific procedures in the field of industrial sociology. 3 s.h. (w)

ASSISTANT PROFESSOR ROY

271. **SOCIAL PATHOLOGY.**—A study of the causes, extent, significance, and constructive treatment of the principal forms of pathology in modern society; poverty, physical defectiveness, malnutrition, mental deficiency, mental disease, undirected leisure activities and unstandardized commercial recreation, alcoholism, prostitution, vagrancy, and delinquency. 3 s.h. (E)

PROFESSOR JENSEN

273. **SPECIAL PROBLEMS IN SOCIAL PATHOLOGY.**—Research projects in social and personal disorganization, limited to advanced students with the approval of the instructor. 1 to 3 s.h. *each semester*. (w)

PROFESSOR JENSEN

276. **CRIME AND DELINQUENCY.**—A study of the original tendencies of man and the problem of socializing these tendencies; the relations of physical and mental defectiveness and untoward influence in the home and neighborhood to crime; the development of criminological theory and procedure, emphasizing penal and reform methods, and specially modern methods of social treatment and prevention of crime. 3 s.h. (E)

PROFESSOR JENSEN

V. SOCIAL THEORY

(Course 91-92, or 101, or 93 or 94 prerequisite for all courses.)

286. **SOCIAL ETHICS.**—A study of sociological fundamentals underlying ethics, including the controversy between materialistic and idealistic social thinkers, the nature of personalities and of social organization, the nature of social values, types of social interaction and their effects upon general social values, underlying principles and facts of social change, and the bearings of all these upon certain social problems. 3 s.h. (w)

PROFESSOR HART

288. **CONTEMPORARY PROBLEMS IN CULTURAL LAG.**—An exploration of such sociological problems as social evolution, cultural lag, conflict, accommodation, leadership, and social reform, in relation to the crisis of civilization, precipitated by the development of the atomic bomb and by kindred discoveries and inventions. 3 s.h. (w)

PROFESSOR HART

VI. METHODS OF SOCIAL RESEARCH

(Course 91-92, or 101, or 93 or 94 prerequisite for all courses.)

191. **PRINCIPLES OF SOCIAL CASE INVESTIGATION.**—A non-professional course designed to acquaint the student with the basic research techniques employed in the case study of the interrelationships of personality and culture in various fields of sociological and anthropological interest. 3 s.h. (E)

ASSISTANT PROFESSOR WHITRIDGE

193. **BASIC STATISTICAL METHODS IN SOCIOLOGY.**—The processes of definition, classification, measurement, tabulation, association, correlation, comparison of averages and of percentages, prediction, preparation and interpretation of tables and charts, as applied to and illustrated by sociological data. One lecture, one recitation and three laboratory hours. 3 s.h. (w)

PROFESSOR HART

292. **STATISTICAL TECHNIQUES IN SOCIOLOGY.**—Intended for graduate students, and for undergraduates who are ready to undertake original statistical research projects. 3 s.h. (w)

PROFESSOR HART

293. SPECIAL PROBLEMS IN SOCIAL STATISTICS.—Applications of statistical techniques to specific research topics. Limited to advanced students with permission of the instructor. 1 to 3 s.h. *each semester.* (w) PROFESSOR HART

DEPARTMENTAL MAJOR

Prerequisite: Sociology 91-92 or 101.

Major Requirements: Eighteen semester hours of work in the Department in addition to Sociology 91-92 or 101, including at least six semester hours in Senior-Graduate courses.

Related Work: A minimum of eighteen semester hours, at least twelve of which are normally chosen from two of the following fields: economics, education, history, political science and psychology. Additional courses in health and physical education, philosophy and religion may also be elected as related work when indicated by the educational requirements of the student and approved by the departmental adviser. But not more than six hours work in courses primarily open to Freshmen may be counted toward this requirement.

ZOOLOGY

PROFESSOR WILBUR, CHAIRMAN; ASSOCIATE PROFESSORS BAILEY AND ROBERTS, DIRECTORS OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR HUNTER, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS BOOKHOUT, GRAY AND SCHMIDT-NIELSEN; ASSOCIATE PROFESSOR HORN; ASSISTANT PROFESSORS LIVINGSTONE, NACE, SANDEEN, VERNBERG AND WARD; DR. MATURO

1. ANIMAL BIOLOGY.—The principles of biology as applied to animals. 4 s.h. (w & e) ASSOCIATE PROFESSORS HUNTER AND ROBERTS; ASSISTANT PROFESSOR SANDEEN AND STAFF

2. GENERAL ZOOLOGY.—A brief survey of the animal kingdom. Prerequisite: Zoology 1. 4 s.h. (w & e) PROFESSOR BOOKHOUT; ASSOCIATE PROFESSOR HUNTER; ASSISTANT PROFESSOR VERNBERG AND STAFF

53. COMPARATIVE VERTEBRATE ANATOMY.—A study of the anatomy and evolution of the organ systems of vertebrates. Prerequisites: Zoology 1, 2. 4 s.h. (w) ASSOCIATE PROFESSOR HORN AND STAFF

71. HEREDITY AND EUGENICS.—Effects of environment and heredity upon the individual and populations; interpretation of human genetic histories. Prerequisite; one year of zoology. 3 s.h. (w) ASSISTANT PROFESSOR WARD

92. GENERAL EMBRYOLOGY.—A study of the fundamental principles of embryology as illustrated in the frog, chick and mammal. Prerequisite: Zoology 53. 4 s.h. (w) ASSISTANT PROFESSOR NACE AND STAFF

109. EVOLUTION.—The facts and theories of organic evolution. Prerequisite: two years of zoology. 3 s.h. (w) ASSISTANT PROFESSOR VERNBERG

110. INTRODUCTION TO GENETICS.—The principles and practical applications of genetics as applied to animals. (Primarily for majors in zoology.) Prerequisite: two years of zoology or consent of instructor. 4 s.h. (w) ASSISTANT PROFESSOR WARD

120. ORNITHOLOGY.—Lectures, laboratory and field trips dealing with the classification, adaptations, and natural history of birds. Prerequisite: one year of zoology. Zoology 53 recommended. 4 s.h. (w) ASSOCIATE PROFESSOR BAILEY

151. PRINCIPLES OF PHYSIOLOGY.—An introductory survey of physiological functions. Prerequisites: At least a year of zoology and a year of chemistry. 4 s.h. (w) PROFESSORS SCHMIDT-NIELSEN AND WILBUR

156. VERTEBRATE HISTOLOGY.—The microscopic structure of normal tissues and organs of the vertebrate body. Training will be given in the preparation of material for microscopic study. Prerequisite: Zoology 53. 4 s.h. (w) ASSOCIATE PROFESSOR ROBERTS

161. ANIMAL PARASITES.—An introductory course dealing with biological principles involved in parasitism of animals including man. Prerequisite: one year of zoology. 4 s.h. (E) ASSOCIATE PROFESSOR HUNTER

193. FUNDAMENTALS OF ZOOLOGY.—The principles involved in the study of structure, function, ecology, genetics, classification, and evolution of animals. An elementary course without laboratory designed for senior students. Not open to students who have had previous courses in zoology. Not a prerequisite to any zoology course. 3 s.h. (w) ASSISTANT PROFESSOR VERNBERG

196. SEMINAR: CURRENT DEVELOPMENTS IN ZOOLOGY.—Prerequisites: Zoology 53 and 92. Open only to seniors. 2 s.h. (w) STAFF

FOR SENIORS AND GRADUATES

204. ADVANCED PARASITOLOGY.—Lectures, readings, and laboratory work, dealing with practical and theoretical problems of classification, morphology and host relations of animal parasites. Offered in alternate years. Prerequisite: Zoology 161. 4 s.h. (E) ASSOCIATE PROFESSOR HUNTER

216. LIMNOLOGY.—A study of lakes, streams, and ponds including their classification, photosynthetic productivity, geochemistry, physical patterns, pollution, fisheries, and significance as microcosms. Lectures, field trips, laboratory work. Prerequisites: Chemistry 1, 2, and a year of biology. 4 s.h. (w) ASSISTANT PROFESSOR LIVINGSTONE

219, 220. SPECIAL PROBLEMS.—Senior majors who have had proper training may be permitted to carry on special work. Permission must be obtained from the Director of Undergraduate Studies and the instructor under whom the student wishes to work. Not more than 4 s.h. (w & E) STAFF

222. ENTOMOLOGY.—A study of anatomy, physiology, embryology, and classification of insects. Offered in alternate years. Prerequisite: One year of zoology. 4 s.h. (w) PROFESSOR GRAY

224. VERTEBRATE ZOOLOGY.—A study of life histories, adaptations, ecology and classification of vertebrate animals. Offered in alternate years. Prerequisite: Zoology 53. 4 s.h. (w) PROFESSOR GRAY

238. SYSTEMATIC ZOOLOGY.—The fundamental theory and practice involved in the collection, identification, and classification of animals. Offered in alternate years. Prerequisites: Zoology 1, 2. 4 s.h. (w) ASSOCIATE PROFESSOR BAILEY

245. RADIATION BIOLOGY.—An introductory course which deals with the basic physical, chemical, and biological principles upon which the study of the biological effects of radiation is based. It consists of four sections: Radiation Physics, Radiation Cytogenetics, Radiation Biochemistry, and Radiation Physiology. Laboratory work using various radiation sources and a number of organisms give an opportunity to investigate these principles at first hand. Prerequisites: Mathematics through trigonometry, college physics, inorganic and organic chemistry. 4 s.h. (w)

252. COMPARATIVE PHYSIOLOGY.—The physiological mechanisms of animals studied on a comparative basis. Prerequisite: Zoology 151 or equivalent. 4 s.h. (w) PROFESSOR SCHMIDT-NIELSEN

253. ADVANCED VERTEBRATE MORPHOLOGY.—Descriptive and experimental studies in comparative vertebrate morphogenesis. Lectures, readings, reports and laboratory. Prerequisites: Zoology 53, 92. 4 s.h. (w) ASSOCIATE PROFESSOR HORN

271. CELLULAR PHYSIOLOGY.—The physiological processes of living matter approached through studies of cells and tissues. Prerequisites: two years of biology and at least one year of chemistry. 4 s.h. (w) PROFESSOR WILBUR

274. INVERTEBRATE ZOOLOGY.—A study of structure, functions, and habits of invertebrate animals under normal and experimental conditions. Field trips will be made to study, collect, and classify animals in their natural habitats. Offered in alternate years. Prerequisites: Zoology 1, 2. 4 s.h. (w) PROFESSOR BOOKHOUT

276. PROTOZOOLOGY.—The morphology, physiology, taxonomy, and culture of protozoa. Offered in alternate years. Prerequisites: Zoology 1, 2. 4 s.h. (w)

PROFESSOR BOOKHOUT

278. INVERTEBRATE EMBRYOLOGY.—Lectures, readings and laboratory work dealing with rearing, life history and development of invertebrates. Offered in alternate years. Prerequisite: Zoology 92. 4 s.h. (w)

PROFESSOR BOOKHOUT

For summer courses in Marine Biology consult the Bulletin of the Duke University Marine Laboratory.

DEPARTMENTAL MAJOR

Prerequisites: Zoology 1 and 2.

Major Requirements (for both A.B. and B.S. degrees): A minimum of 24 s.h. of zoology including courses 53, 92, 151 or 271.

Related Work: At least one year of chemistry; additional work usually chosen from courses in botany, chemistry, geology, mathematics and physics.

Language Requirements: For A.B. degree: Preferably German or French. For B.S. degree: Both German and French.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

Courses of Instruction College of Engineering



CIVIL ENGINEERING

PROFESSOR ROWE, CHAIRMAN; PROFESSOR WILLIAMS; ASSOCIATE PROFESSOR PALMER;
ASSISTANT PROFESSORS ARGES, GARDNER, HAINES, PETERSON, AND
THARP; MESSRS. HARRAWOOD AND TANER

CE 51. CIVIL ENGINEERING FUNDAMENTALS.—An introductory to engineering procedures and methods. The history and scope of civil engineering. Prerequisite: Engrg 1, Math 5 and 6. 1 s.h. (w) PROFESSOR ROWE

CE 61. SURVEYING I.—Use of instruments; transit, stadia and compass surveying; differential and profile leveling; setting grade stakes; calculations of bearings, latitudes, departures and areas; methods of plotting; mapping based on transit-tape and stadia surveys; determination of azimuth by solar and stellar observations; care and adjustment of instruments. Prerequisite: Engrg 1 and Math 6. 4 s.h. (w) ASSISTANT PROFESSOR ARGES AND MR. HARRAWOOD

CE 62. SURVEYING II.—Topographic surveying using stadia and plane table; rural and urban land surveys; public land system; grading plans and earthwork quantities; triangulation. Introduction to photogrammetry. Prerequisite: CE 61. 2 s.h. (w) ASSISTANT PROFESSORS ARGES AND PETERSON

CE 108. *ADVANCED STRENGTH OF MATERIALS.—Applications of Mohr's circle, deflections, and energy of strain to advanced problems. Prerequisite: Engrg 107. 3 s.h. (w) ASSISTANT PROFESSOR GARDNER

S 110. PLANE SURVEYING.—The equivalent of CE 61 given especially for students in forestry. See Bulletin of Summer Session. 4 s.h. (w) ASSISTANT PROFESSOR ARGES

CE 113. ROUTE SURVEYING.—The calculation and laying out of simple, compound, and easement curves; widening of curves; vertical curves; setting slope stakes; ordinary earthwork computations and mass diagrams. Prerequisite: CE 61. 2 s.h. (w) PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR THARP

CE 116. HIGHWAY ENGINEERING.—Location, design, construction and maintenance of highways and city streets; soil stabilization; traffic studies; economics of planning and design. Prerequisite: CE 113, CE 135. 3 s.h. (w) PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR THARP

CE 118. MATERIALS OF ENGINEERING.—Study and testing of materials, commonly used in engineering. Standard tests to determine significant physical properties of cementing materials and aggregates. The design and proportioning of concrete mixtures. Prerequisite: Engrg 107; concurrent: Engrg 109. 2 s.h. (w) ASSISTANT PROFESSORS ARGES AND GARDNER

CE 121. *HYDROLOGY.—Fundamentals of meteorology; precipitation; evaporation. Ground water development. Stream flow and stream gaging. Hydrograph analysis. Flood routing. Field trips to be arranged. Prerequisite: Engrg 128. 3 s.h. (w) PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR PETERSON

CE 123. HYDRAULIC ENGINEERING.—Pipe flow, compound pipe systems, network analysis, analysis and problems on pumps and turbines, fundamental aspects of hydrology. Open channel flow, non-uniform flow computations. Irrigation and drainage problems. Flood control and hydraulic structures. Prerequisite: Engrg 128. 3 s.h. (w) ASSISTANT PROFESSOR PETERSON

* Offered only upon sufficient demand; enrollment limited.

CE 124. SANITARY ENGINEERING.—Public Health and Engineering Aspects of Water Supply and Waste Disposal. Population estimation, storage requirements, supply and collection systems. Water and waste treatment, laboratory analyses and interpretation of results. Prerequisite: CE 123, Chemistry 2. 3 s.h. (w)

ASSISTANT PROFESSOR PETERSON

CE 131. STRUCTURAL MECHANICS I.—Stresses in trusses by algebraic and graphic methods under all conditions of loading. Structural drafting. Prerequisite: Engrg 107. 3 s.h. (w)

ASSOCIATE PROFESSOR PALMER AND MR. TANER

CE 132. STEEL AND TIMBER.—Tension, compression, flexural members, eccentric connections, unsymmetrical bending, riveted and welded plate girders, trusses and office building frames. Timber design using ring connectors. Design and detail drawings. Prerequisite: CE 131. 4 s.h. (w)

ASSOCIATE PROFESSOR PALMER

CE 133. REINFORCED CONCRETE.—Theory and design of reinforced concrete beams, columns, and footings. Arches and bents by column analogy. Prerequisite: CE 140. 4 s.h. (w)

ASSISTANT PROFESSOR GARDNER

CE 135. SOIL MECHANICS.—Identification and classification; flow nets; frost action; stability of foundations, cuts and embankments, and retaining walls; settlement. Laboratory includes identification, permeability, shear, unconfined compression, consolidation and compaction tests. Prerequisite: Engrg 107. 3 s.h. (w)

ASSISTANT PROFESSOR GARDNER

CE 137, 138. SEMINAR.—Students are required to make reports and to talk on current engineering literature or on such other topics as may be assigned. 1-2 s.h. (w)

STAFF

CE 140. STRUCTURAL MECHANICS II.—Application of least work, slope deflection, and moment distribution to statically indeterminate structures. Deflection of trusses. Prerequisite: CE 131. 3 s.h. (w)

PROFESSOR ROWE AND ASSOCIATE PROFESSOR PALMER

CE 142.*ADVANCED HYDRAULICS.—Statistical and dynamical principles of fluids applied to specific engineering problems. Effects of gravity, viscosity, compressibility, and surface tension on fluid motion in closed conduits and open channels; surface and form resistance; dimensional analysis and theory of models. Non-uniform flow in open channels. Hydraulic jump, backwater curves. Prerequisites: Engrg 128 or ME 105. 3 s.h. (w)

PROFESSOR WILLIAMS

CE 143, 144. PROJECTS IN CIVIL ENGINEERING.—This course may be assigned by the Chairman of the Department to certain seniors who have shown an aptitude for research in one distinct field of civil engineering, in which case it may be substituted for certain general civil engineering courses. 2-6 s.h. (w)

STAFF

CE 146. PROFESSIONAL ENGINEERING PROBLEMS.—Professional aspects of civil engineering practice. Selected problems in analysis and design, consideration of engineering economy, contracts, specifications, and ethics. Seniors only. 2-3 s.h. (w)

ASSOCIATE PROFESSOR PALMER

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

ELECTRICAL ENGINEERING

ASSOCIATE PROFESSOR VAIL, CHAIRMAN; PROFESSOR SEELEY; ASSOCIATE PROFESSORS KRAYBILL AND MEIER; ASSISTANT PROFESSORS ARTLEY AND OWEN; MESSRS. BRIGHAM, LAHEY, MCKEEL, THURSTONE, TRICKEY AND YOUNG

EE 51. ELECTRICAL ENGINEERING ORIENTATION.—The basic philosophy of engineering education; an introduction to the staff, the curriculum, and the facilities of the Department of Electrical Engineering; techniques for use of the library; instruction in use of the slide rule and in methods of study; information concerning the role of engineering and of the professional engineering societies in

* Offered only upon sufficient demand; enrollment limited.

our national life; introduction to the principles of engineering economy. One two-hour session. 1 s.h. (w)

ASSOCIATE PROFESSOR KRAYBILL AND

ASSISTANT PROFESSOR ARTLEY

EE 52. ELECTRICAL ENGINEERING PRINCIPLES I: ELECTROMAGNETICS.—The first of a three-course sequence that develops the fundamental principles common to all electrical engineering. The mathematical and physical analysis of energy relations in electric and magnetic fields; the interrelationships between field and circuit concepts as a transition to the study of electric and magnetic circuits; vector notation; potential; gradient; Faraday's and Coulomb's laws; Ampere's law; dielectric and magnetic materials; resistance, capacitance and inductance of systems of conductors; systems of electric and magnetic units; simple circuits. Four recitations. Prerequisite: Mathematics 52; Physics 42. 4 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 71. INSTRUMENTATION.—Basic principles of instrumentation systems: characteristics and construction of devices for measuring physical quantities encountered in all branches of engineering. One three-hour session. Prerequisite: Mathematics 51; Physics 42. 1 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

AND MR. LAHEY

EE 101. ELECTRICAL ENGINEERING PRINCIPLES II: CIRCUITS.—The principles of alternating- and direct-current electric circuits; instantaneous and effective values; the algebra of phasors and complex quantities; impedances in combination; Kirchhoff's laws; coupling; non-sinusoidal waves; Laplace transform; transients. Prerequisite: EE 52. Concurrent: Mathematics 111. 3 s.h. (w)

ASSOCIATE PROFESSOR VAIL

EE 102. ELECTRICAL ENGINEERING PRINCIPLES III: NETWORKS.—The principles of electric network analysis employing more sophisticated techniques than were encountered in the preceding course. Matrix notation; the generalized concept of impedance; the use of electric network analogue techniques in solving non-electrical problems; mesh and nodal analysis; wye-delta transformations; reciprocity theorem; Thevenin's and Norton's theorems; polyphase circuits. Prerequisite: EE 101; Mathematics 111. 3 s.h. (w)

ASSOCIATE PROFESSOR VAIL

EE 106. INTRODUCTORY ELECTRONICS.—Topics that are basic to engineering applications of electronics; particle ballistics; emission; conduction of vacuums, gases, liquids and solids; static and dynamic characteristics of vacuum and solid state devices; basic amplifier circuits. Three recitations. Prerequisite: EE 101. Concurrent: EE 114. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY AND MR. LAHEY

EE 107-108. ELECTRICAL ENGINEERING PRINCIPLES LABORATORY.—Instruction in electrical laboratory techniques and in the preparation of engineering reports; experimental verification and amplification of the theory in the sequence of courses EE 52, EE 101 and EE 102. One three-hour laboratory. 2 s.h. (w)

MESSRS. THURSTONE AND YOUNG

EE 114. INTRODUCTORY ELECTRONICS LABORATORY.—A course designed to acquaint the student with electronic equipment and laboratory techniques, as well as to complement and supplement the principles of the classroom course, with which it should be taken concurrently. 1 s.h. (w)

STAFF

EE 123. PRINCIPLES OF ELECTRIC CIRCUITS.—A course designed especially for students in other branches of engineering, covering the fundamental electrical units and both alternating- and direct-current circuits. Three class sessions and one three-hour laboratory. Prerequisite: Mathematics 52; Physics 42. 4 s.h. (w)

ASSOCIATE PROFESSOR KRAYBILL AND MESSRS.

BRIGHAM, LAHEY, McKEEL AND YOUNG

EE 124. PRINCIPLES OF ELECTRIC MACHINERY.—A course designed especially for students in other branches of engineering, covering the application of the principles of course EE 123 to alternating and direct-current machinery and associated apparatus. Three class sessions and one three-hour laboratory. Prerequisite: EE 123. 4 s.h. (w)

ASSOCIATE PROFESSOR KRAYBILL AND MESSRS.

BRIGHAM, LAHEY, McKEEL AND YOUNG

EE 159. *TRANSMISSION.—A development of the theory underlying the transmission of electric energy over conductors at both power and communication frequencies. Two class sessions and one two-hour computation. Prerequisite: EE 102, EE 106; Mathematics 111. Elective for electrical majors. 3 s.h. (w)

PROFESSOR SEELEY

EE 161. *HIGH-VOLTAGE PHENOMENA.—An introductory study of high-voltage phenomena and their engineering application; behavior of gaps and insulators upon application of power-frequency and impulse voltages; corona; properties of insulating materials; high-voltage measurements; elements of high-voltage design. Two class sessions and one three-hour laboratory. Prerequisite: EE 101-102, EE 105-106, and permission of instructor. Elective for electrical majors. 3 s.h. (w)

ASSOCIATE PROFESSOR VAIL

EE 163-164. ELECTRIC MACHINERY LABORATORY.—A two-semester course paralleling and integrated with the classroom course, EE 257-258, with which it should be taken concurrently. 2 s.h. (w)

ASSOCIATE PROFESSOR MEIER; MR. McKEEL

EE 165-166. ELECTRICAL ENGINEERING SEMINAR.—A course in which seniors are required to present oral reports and dissertations on material appearing in current engineering literature. Juniors may participate, but without credit. 2 s.h. (w)

STAFF

EE 167-168. ADVANCED ELECTRONICS LABORATORY.—A two-semester laboratory course paralleling and integrated with the classroom course in Advanced Electronic Networks, with which this course should be taken concurrently. 2 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 171. *FUNDAMENTALS OF ILLUMINATION.—Factors that influence seeing; lighting language, sources, and measuring techniques; basic factors involved in recommended lighting practice. Two class sessions and one two-hour computation. Prerequisite: EE 101-102 or EE 123, and permission of instructor. Elective. 3 s.h. (w)

ASSOCIATE PROFESSOR KRAYBILL

EE 173-174. *PROJECTS IN ELECTRICAL ENGINEERING.—A course which may be undertaken only by seniors who show special aptitude, or who may have had previous experience directly related to the proposed project. The consent of the Chairman of the Department must be obtained before registering. Elective for electrical majors. 3-6 s.h. (w)

STAFF

EE 175. *NETWORK ANALYSIS.—An advanced study of electric network theory and its application to certain problems in engineering practice; complex frequency; pole and zero network analysis; analogue solutions; filters and transmission lines. Prerequisite: EE 102; permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 177. *ELECTROMAGNETIC THEORY.—Vector analysis; Maxwell's equations; radiation; propagation; antennas. Prerequisite: EE 102; permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 179. *ADVANCED ELECTRICAL MEASUREMENTS.—The theory and practice of measurements of electrical quantities at extremes of voltage, current, power, and frequency. Two class sessions and one three-hour laboratory. Prerequisite: EE 71, EE 102, EE 106; and permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 189. *ELECTROMAGNETIC DEVICES.—General concepts and techniques useful in solving problems arising in the design of electromagnetic devices, particularly those employing ferro-magnetic materials; relays; saturable reactors; rotating amplifiers; motors and generators. Prerequisite: permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 197. *INDUSTRIAL APPLICATION OF ELECTRICAL EQUIPMENT.—Lectures, demonstrations, and recitations designed especially for students in other branches of engineering, dealing with the basic principles of utilization of a wide

* Offered only upon sufficient demand; enrollment limited.

variety of electrical equipment in industrial practice. Emphasis on industrial control, motor and generator application, and electronic devices and applications. Prerequisite: EE 124; permission of instructor. Elective for nonelectricals. 3 s.h. (w)

ASSOCIATE PROFESSOR MEIER

EE 199. * **FEEDBACK CONTROL SYSTEMS.**—The theory, analysis, design and operation of servomechanisms, regulators, program controllers, and other feedback controls; electrical, mechanical, hydraulic, aerodynamic, pneumatic, and thermal systems; steady-state and transient solutions; stability criteria and diagrams; linear and nonlinear systems. Two class sessions and one three-hour laboratory. Prerequisite: EE 102, EE 106, and permission of instructor. Concurrent: EE 163 and EE 257. Elective for electrical majors. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 201. * **ENERGY SYSTEMS.**—Consideration of general concepts of energy storage, transfer, transformation, and control that are applicable to a wide variety of technical systems, with emphasis on their common mathematical structure. Included are electrical, magnetic, mechanical, hydraulic, aerodynamic, and thermal systems. Applications to specific engineering devices and machines. Prerequisite: permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 202. * **INFORMATION SYSTEMS.**—Consideration of general concepts of information storage, transfer, and processing. Optimum total response of information handling systems, including considerations of stability and dynamic response in the time and frequency domains. Applications to communications networks and devices, including an introduction to computers. Prerequisite: permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 211. * **SOLID STATE ENGINEERING.**—An introduction to concepts and engineering applications of solid state physics: crystalline structure and thermal properties of solids; insulators, semiconductors, and conductors; magnetic materials. Prerequisite: permission of instructor. 3 s.h. (w)

ASSOCIATE PROFESSOR VAIL

EE 231. * **NUCLEAR ENGINEERING.**—Review of nuclear physics; fission and the chain reaction; nuclear reactor principles; materials, instrumentation, and control of nuclear reactors; selected applications and techniques of nuclear engineering. Prerequisite: permission of instructor. 3 s.h. (w)

ASSOCIATE PROFESSOR MEIER

EE 257-258. **ELECTRIC MACHINERY I-II.**—Application of the principles of the first three years to the underlying theory of design and operation of both static and rotating electric machinery; transformers; rotating machine components; energy flow in generators and motors; induction and synchronous generators and motors; commutation; d-c generators and motors; series and parallel operation of electric machines. Prerequisite: EE 102. Concurrent: EE 163-164. 6 s.h. (w)

ASSOCIATE PROFESSOR MEIER AND MR. TRICKEY

EE 259. * **ADVANCED ELECTRICAL ENERGY CONVERSION.**—Advanced theory of rotating electric machines; direct and quadrature axis components; equivalent circuits; symmetrical components; transients in machine systems. Prerequisite: an advanced course in electric machinery and permission of instructor. 3 s.h. (w)

ASSOCIATE PROFESSOR MEIER

EE 261-262. **ADVANCED ELECTRONIC NETWORKS I-II.**—Advanced topics in engineering electronics; electronic circuit analysis; narrow- and wide-band amplifiers; feedback amplifiers; oscillators; modulation and demodulation; non-sinusoidal waves in linear and non-linear circuits; microwave devices; communication systems. Prerequisite: EE 102; EE 106. Concurrent: EE 167-168. 6 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 263-264. * **OPERATIONAL CIRCUIT ANALYSIS.**—The mathematical analysis of certain circuits used in electrical engineering, with an introduction to the application of operational calculus to circuit analysis. Prerequisite: EE 101-102, Mathematics 111, and permission of instructor. Elective for electrical majors. 6 s.h. (w)

PROFESSOR SEELEY

* Offered only upon sufficient demand; enrollment limited.

EE 265.*ADVANCED TOPICS IN COMMUNICATIONS.—Special problems dealing in the design and application of devices and systems in communications engineering. Prerequisite: an advanced course in electronic networks. 3 s.h. (w)

ASSISTANT PROFESSOR OWEN

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

MECHANICAL ENGINEERING

PROFESSOR MACDUFF, CHAIRMAN; PROFESSORS KENYON AND REED; ASSISTANT PROFESSORS ELSEVIER, FULTON, LEWIS AND WILBUR; MESSRS. CALLESON, RABIN, SHAWVER, AND TAYLOR

ME 52. KINEMATICS, MECHANISM AND KINETICS.—Motion of particles. Mathematical and graphical studies of displacement, velocity and acceleration in mechanical elements and systems. Synthesis and analysis of mechanisms for automatic machines; work, energy, impulse and momentum applied to the plane motion of rigid bodies. Three recitations and three laboratory hours. Prerequisite: Physics 41, Engineering 2. Concurrent: Mathematics 52, Engineering 57. 4 s.h. (w)

PROFESSOR MACDUFF, MR. RABIN

ME 101-102. ENGINEERING THERMODYNAMICS.—A basic study of the laws of thermodynamics, their corollaries, and their use in engineering analysis and design. Properties and processes of gases, vapors, vapor-liquid systems, and mixtures. Cycles. Combustion. Prerequisite: Chemistry 2, Physics 42, Mathematics 52. 6 s.h. (w)

ASSISTANT PROFESSOR WILBUR

ME 103-104. APPLIED THERMODYNAMICS.—A terminal course in thermodynamics and its engineering applications, for civil and electrical engineering students. First semester: first and second laws, gases, vapors, processes, cycles. Second semester: combustion analysis, applications of the first and second laws of thermodynamics, heat transfer, psychrometry and refrigeration. Prerequisite: Chemistry 2, Physics 42, Mathematics 52. 6 s.h. (w)

PROFESSORS KENYON AND REED, MR. RABIN

ME 105. FLUID MECHANICS.—An introduction to fluid statics and dynamics. Basic laws, internal and external flow phenomena, dimensional analysis, dynamic similarity, viscosity, compressibility, propulsion and fluid power. Prerequisite: Physics 42, Mathematics 52. 3 s.h. (w)

PROFESSOR KENYON

ME 106. HEAT TRANSFER.—A basic course covering conduction, radiation and convection; heat transfer to boiling liquids and condensing vapors; over-all transfer of heat; steady state and variable flow; graphical and analytical solutions. Prerequisite: Mathematics 52, Physics 42. Concurrent: ME 102 or ME 103, ME 105 or Engineering 128. May be elected by a limited number of CE and EE students. 3 s.h. (w)

PROFESSORS REED AND KENYON

ME 107. MATERIALS AND PROCESSES.—Lectures and recitations covering elementary metallurgy, selection and mechanical properties of engineering materials, and effect of fabrication methods upon properties; casting, forging, welding, rolling, machining, grinding, other common processes and interchangeable manufacture as applied to present-day industry. Supplemented with films and demonstrations. Prerequisite: Chemistry 2, Engineering 107, Engineering 109. 3 s.h. (w)

PROFESSOR MACDUFF, MESSRS. CALLESON AND RABIN

ME 108. *AERONAUTICS.—A general course applying the principles of fluid mechanics to airfoils, propellers and the complete airplane. Prerequisite: ME 105. 3 s.h. (w)

ASSISTANT PROFESSOR ELSEVIER

ME 113-114. JUNIOR MECHANICAL ENGINEERING LABORATORY.—Open only to mechanical engineering students. First semester: experiments and reports on instruments, dynamometers, hydraulics, analysis of exhaust gas, and properties of fuels and oils. Second semester: experimental fuel analysis, calorimetry, flow phenomena and instrument calibration. Concurrent: ME 101-102. 2 s.h. (w)

STAFF

* Offered only upon sufficient demand; enrollment limited.

ME 115-116. MECHANICAL ENGINEERING LABORATORY.—Open only to electrical and civil engineering students. Experiments and reports on instruments, hydraulics, brakes and dynamometers, analysis of exhaust gas, heating value of fuels, internal combustion engines, air compressor, steam engine, steam turbine, centrifugal fan and centrifugal pump. Concurrent: ME 103-104. 2 s.h. (w) STAFF

ME 150-151. MACHINE DESIGN.—Application of the principles of mechanics, strength of materials, constructive processes and engineering drawing to the design of machines and the analysis of machine elements, followed by the design of at least one complete machine. ME 150 has one recitation and three laboratory hours; ME 151 has three recitations and six laboratory hours. Prerequisite: Engineering 107, Engineering 109, ME 52. Concurrent with ME 150: ME 107. 7 s.h. (w) ASSISTANT PROFESSOR LEWIS AND MR. CALLESON

ME 153-154. HEATING, AIR CONDITIONING AND REFRIGERATION.—A fundamental course with emphasis on the theoretical basis of the subject. Determination of heat losses and gains; design of steam and hot water heating systems; panel heating. Fundamentals of refrigeration theory and design. Laboratory experiments combining rating and testing with demonstrations of principles. Prerequisite: ME 102 or ME 104, ME 106. Concurrent: ME 159-160. Three recitations, three laboratory hours in alternate weeks. 7 s.h. (w) PROFESSOR REED

ME 155 INTERNAL COMBUSTION ENGINES.—Principal cycles; fuels and fuel mixtures; effect of real mixtures on theoretical cycles; combustion; carburetion and fuel injection. Thermodynamic analysis of engine performance. Modern development in the internal combustion engine. Prerequisite: ME 101-102. 3 s.h. (w) ASSISTANT PROFESSOR ELSEVIER

ME 157. *PUMPS, COMPRESSORS AND TURBINES.—An introduction to the theory and design of centrifugal pumps and compressors, axial-flow compressors, impulse and reaction turbines, and gas turbine plants. Includes combustion systems and regenerators. Prerequisite: ME 102, ME 105, ME 106. 3 s.h. (w) PROFESSOR KENYON

ME 158. INDUSTRIAL ENGINEERING.—A study of the growth and present tendencies of productive industries as concerns the engineer. Specific topics treated are: plant location, organization, production and cost controls, wage payment, etc. Seniors only. 3 s.h. (w) PROFESSOR KENYON AND ASSISTANT PROFESSOR LEWIS

ME 159-160. SENIOR MECHANICAL ENGINEERING LABORATORY.—Open only to mechanical engineering students. First semester, 1 s.h.: experiments and reports on performance and economy of internal combustion engines, centrifugal pump and fan, steam engine and turbine, flow in ducts, heat exchanger. Second semester, 1 s.h.: experiments and reports on air compressor and on steam power plant components; plan and execute original experiments. Prerequisite: ME 105, ME 106, ME 114. (w) STAFF

ME 162. POWER PLANTS.—A study of the economic and engineering factors affecting the location and selection of power plants and related equipment. Discussion of conventional and nuclear fuels, other energy sources, methods of power production and control and safety problems in nuclear plants. Prerequisite: ME 102 or ME 104. 3 s.h. (w) PROFESSOR KENYON

ME 163. ADVANCED MECHANICS.—An introduction to the dynamics of mechanical systems; equilibrium, stability, lumped and distributed systems, cradle and field balancing. Study of such systems by classical differential equations, mechanical impedance, operational calculus and analog simulation. Prerequisite: Mathematics 53, ME 151. 3 s.h. (w) PROFESSOR MACDUFF

ME 164. *ENGINEERING ANALYSIS.—A study of a series of engineering problems with particular reference to mathematical and graphical methods of solution and engineering interpretation of results. 3 s.h. (w) ASSISTANT PROFESSOR WILBUR

ME 166. *AIR CONDITIONING DESIGN.—Analysis of air-conditioning requirements, summer and winter, commercial and industrial. Design of systems and units; selection of equipment. Prerequisite: ME 153. 3 s.h. (w) PROFESSOR REED

* Offered only upon sufficient demand; enrollment limited.

ME 171. INSTRUMENTATION.—An introduction to the basic fundamentals of instrumentation and of the control of processes and systems, with emphasis on the principles and accuracy of measurements. Open to seniors only. One recitation, three laboratory hours. 2 s.h. (w) PROFESSOR MACDUFF

ME 173-174. MECHANICAL ENGINEERING SEMINAR.—A course designed to keep the students abreast of progress in the engineering field and to develop their ability to express ideas effectively in speech and writing. Each student gives at least one major presentation. Open to seniors only. First semester, 2 s.h.; second semester. 1 s.h. (w) STAFF

ME 197-198. PROJECTS IN MECHANICAL ENGINEERING.—This course may be assigned by the Chairman of the Department to certain seniors who express a desire for such work and who have shown aptitude for research in one distinct field of mechanical engineering. Either semester or both semesters. 1-6 s.h. (w) STAFF

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

ENGINEERING SUBJECTS COMMON TO ALL CURRICULA

ENGRG 1. ENGINEERING DRAWING.—The study of mechanical drawing with emphasis on third angle projection, pictorial drawing, dimensioning, working drawings, pencil and ink techniques. 2 s.h. (w)

ASSISTANT PROFESSORS HAINES AND LEWIS AND STAFF

ENGRG 2. DESCRIPTIVE GEOMETRY.—A study of drawing board geometry with emphasis on line and plane problems, developments, and intersections. Further emphasis on drawing techniques. Prerequisite: Engrg 1. 2 s.h. (w)

ASSISTANT PROFESSORS HAINES AND LEWIS AND STAFF

ENGRG 57. STATICS.—A study of force systems, equilibrium by algebraic and graphic methods, centroids, friction, moment of inertia. Prerequisite: Engrg 1. Concurrent: Mathematics 52. 3 s.h. (w)

ASSOCIATE PROFESSOR PALMER AND
ASSISTANT PROFESSOR THARP

ENGRG 58. DYNAMICS.—General principles of dynamics as applied to particles and rigid bodies. Translation, rotation, general plane motion, work and energy, impulse and momentum, gyroscopic motion. Prerequisite: Engrg 57 and Mathematics 52. 3 s.h. (w)

ASSISTANT PROFESSOR ARGES

ENGRG 107. STRENGTH OF MATERIALS.—Stresses and strains in elastic bodies; shear and moment diagrams; stresses in beams; beam deflections by double integration and area—moments; statically indeterminate beams, torsion, principal stresses. Prerequisite: Engrg 57, Mathematics 52. 3 s.h. (w)

PROFESSOR ROWE

ENGRG 109. STRENGTH OF MATERIALS LABORATORY.—Study and use of testing machines and strain gages. Tests to determine significant physical properties of the common engineering materials. Experimental verification of the elementary theory of structural members. Must be preceded or accompanied by Engrg 107. 1 s.h. (w)

ASSISTANT PROFESSOR ARGES AND MR. TANER

ENGRG 128. HYDRAULICS.—Physical properties of fluids, fluid statics, continuity and energy principles, pressure-momentum principle, elementary principles of turbines and pumps, flow of a real fluid, dimensional analysis and dynamic similarity, fluid flow in closed conduits and in open channels, fluid measurements. Prerequisite: Engrg 58 or ME 52. 3 s.h. (w)

PROFESSOR WILLIAMS AND MR. HARRAWOOD

ENGRG 151. *AIRCRAFT STRUCTURES.—Fundamental theory of stress analysis of airplane components including an introduction to design principles and methods. Space structures, inertia forces, load factors, properties of aircraft materials, buckling of thin sheets and curved panels, semimonocoque structures, plasticity, shear flow theory, semitension field beams. Seniors only. Prerequisite: Engrg 107. 1 s.h. (w)

ASSISTANT PROFESSOR ARGES AND TANER

* Offered only upon sufficient demand; enrollment limited.

ENGRG 169. *LEGAL ASPECTS OF ENGINEERING.—A course designed to introduce engineering students to those aspects of the law encountered in the practice of engineering. Subjects included are: contracts and specifications, real and personal property, torts, insurance, agency, equity, evidence, labor management, sales, expert testimony, engineering registration and ethics. Open to seniors only. 3 s.h. (w)

MR. RABIN

ENGRG 170. *PATENT LAW FOR ENGINEERS.—A course designed to familiarize engineering students with the legal principles and procedures for protecting patentable inventions, such as drafting and analysis of specifications and claims, study of infringements, assignments, licenses, and record documentation. Open to seniors only. 3 s.h. (w)

MR. RABIN

* Offered only upon sufficient demand; enrollment limited.

Student Life and Activities



CONDUCT AND DISCIPLINE: The University expects of its students loyal and hearty cooperation in developing and maintaining high standards of conduct as well as of scholarship. The University therefore reserves the right, and matriculation by the student is a concession of this right, to ask the withdrawal of any student whose conduct at any time is not satisfactory to the University, even though no specific charge be made against the student.

General oversight of the conduct of students and the administering of discipline are under the supervision of the Vice-President in the Division of Student Life. Immediate supervision is entrusted to the Dean of Men and the Dean of Women. However, through the expressed willingness of the students of the University to assume the responsibility of maintaining high standards of morals and honor, the student body has properly become to a great degree self-governing. Two councils, one of men and the other of women, each composed of duly elected representatives of the student body, exercise the authority granted the students for their respective colleges to investigate all cases of misconduct, as well as all other cases of violation of proper student standards and traditions, and to make recommendations of penalties based on their findings. They exert a guiding and stimulating influence for the promotion of high ideals of conduct and of student relationships.

ASSEMBLY AND CLASS MEETINGS: The sophomore, junior and senior classes of Trinity College and the College of Engineering meet four times each year and on call to discuss matters pertinent to the individual groups. The freshman classes of these colleges hold weekly meetings. Attendance in class meetings is compulsory.

In the Woman's College the Student Government Association meets on first Monday evenings; house meetings are held on second Monday evenings; the College Assembly is held on third Monday evenings; and class meetings, with the exception of the freshman class, are held on fourth Monday evenings. The freshmen meet as a class each week. In each instance, attendance is required.

AUTOMOBILE REGULATIONS: Freshmen are not permitted to own or operate motor vehicles at the University. Members of other classes in Trinity College and the College of Engineering are permitted to operate motor vehicles provided they are registered and operated in accordance with University regulations; under the same conditions seniors in the Woman's College may have cars.

SCHOLASTIC REGULATIONS FOR PARTICIPATION IN ATHLETIC AND OTHER ACTIVITIES: Students who received less than a passing grade on more than six hours of required work of the preceding term are ineligible to represent the University in any athletic contest, concert, or other public event.

Members of athletic teams or other student groups engaging in public representation of the University are expected to be carrying their current work satisfactorily. Students may be barred from participation in such representation if, in the opinion of the dean, they fail to meet this requirement.

RELIGIOUS LIFE: "Eruditio et Religio," the motto emblazoned on the seal of the University, proclaims belief in the essential union of knowledge and religion in the educational process. Provisions, both academic and extra-curricular, are made for the realization of this aim. Course offerings in the field of Religion are described elsewhere in this catalog. The description below concerns provisions other than class work.

The Gothic Chapel stands at the center of the campus, an inspiring symbol of the place of religion in the well-balanced life. The Chapel encourages the cultivation of the spiritual and moral life of students through participation in a program of varied activities.

In the Service of Worship on Sunday morning several hundred students participate by singing in the choir; at least one hundred other students aid in special ways, as ushers, collectors, and assistants at communion services. Hundreds come to worship and are inspired by the beauty and challenge of these services.

But the Chapel also encourages the students to translate their worship into effective Christian living. A rich program of activities is offered, so that every student can find something that will challenge his interests and meet his needs as an active member of his faith.

These activities are developed along three lines: interfaith, interdenominational, and denominational. Protestant, Jewish, and Roman Catholic students are organized in their respective groups; but periodically they join together in interfaith programs which are carefully planned to respect the traditions of the various faiths. Interdenominational activities for all Protestant students are emphasized because it is believed that a more complete Christian faith is developed through sharing knowledge and fellowship with Christians of other churches.

Vital to the religious life at Duke are the various denominational groups. The Chapel looks to these organizations, under the leadership of their respective chaplains or advisers, to provide a continuing denominational experience through worship, study, service activities, and recreation. The promotion of churchmanship as a part of the total educational experience at Duke is designed to equip students to

assume the role of leaders in their local church when they leave the University.

Additional features of the program are the organ recitals and special musical services which are given from time to time on Sunday afternoons in the Chapel. During the summer, carillon recitals are presented twice a week.

The total religious program is under the direction of the Duke University Religious Council, composed of an equal number of faculty-staff members and students. The Chaplain is the administrative officer in charge of the religious activities program. Professional guidance is given by the Chaplain to the University, the Dean of the Chapel, the Choir Director, and the Organist, the Associate Directors of Student Religious Life, and the denominational Chaplains.

PUBLIC LECTURES AND SOCIAL FUNCTIONS: The Faculty Council on Public Lectures supervises all public lectures, addresses, and other public events given under the auspices of the University or of any organization in any way connected with the University. All dates and programs must be approved by the Council, which prepares an official yearly calendar. Current announcements of public occasions appear in the Weekly Calendar of Duke University issued by the Office of the Director of the Student Union.

A social committee composed of students and staff members from the undergraduate colleges exercises general supervision over major social functions. The executive officers of the committee are the Dean of Undergraduate Men and the Dean of Undergraduate Women.

MEDICAL CARE: The Student Health Program is closely related to the Teaching Hospital of the Duke University Medical School. Complete medical facilities, therefore, are always available to students. With necessary exceptions noted below, this type of care is furnished at minimum expense to regularly enrolled students. The cost is included in the general fee paid each semester and in the fees charged each student in the summer quarter.*

The service is under the direction of the University Physician with the cooperation of the Staff. It includes hospitalization in Duke Hospital, as deemed necessary by the Hospital Staff but limited to thirty days; medical and surgical care under the supervision of a senior physician or surgeon; drugs, X-ray work, and ward nursing. Special nursing is not covered. Students pay for board while in the hospital. Refraction of eyes, treatment of teeth and of all chronic and pre-existing conditions, such as diseased tonsils, hernias, pilonidal cysts and other elective surgery, chronic skin conditions, endocrine disturbances, etc., and accidents or illnesses occurring during vacations or while off the campus, are not included in this service. The cost of

* Only those students who have paid the fee for the semester, quarter or summer session during which illness occurs are entitled to the services described herein.

any necessary braces and orthopaedic appliances, as well as of special nursing, must be borne by the students, and blood used for transfusions must be paid for or replaced. If students have insurance providing hospitalization, surgical, or medical benefits, the benefits shall be applied to the cost of their medical care.

Advisory consultation with a psychiatrist at no expense is available to students through referral either by the Student Health Physicians or by the deans, but office visits for psychotherapeutic interviews cannot be included in this service.

A woman physician is in residence and a nurse in constant attendance at the Woman's College Infirmary. Patients in this Infirmary can be transferred to the Duke Hospital at any hour of the day or night. Male students receive ambulant care at the student health office in the hospital building during dispensary hours. Men are admitted to the hospital directly whenever necessary. The emergency service and the specialist consulting services of the Hospital and Medical School are always available.

Students are given a careful physical examination upon arrival at the University. Any physical defects are recorded along with the record of the questionnaire from the family physician. Every student should be re-vaccinated against smallpox within two years before admission to the University. It is urgently advised that the standard Salk vaccine routine for poliomyelitis be completed by all students and that all male undergraduates be actively immunized to tetanus by injections of toxoid.

PHYSICAL EDUCATION: Students of Trinity College and the College of Engineering are required to engage in some type of physical activity for two years or four full semesters. This work consists of participation in natural, practical, physical activity for at least three one-hour periods each week. The purpose is to improve body control and strength through big muscle activities, to stimulate the development of mental and physical alertness, to establish habits of regular exercise, and to give training and experience in various kinds of recreational sports that will be indulged in after the student is graduated from the University.

Intramural sports are promoted and fostered in all phases of athletic activity. Meets, tournaments, and leagues are seasonally organized in the different sports. All students of the two colleges are eligible to enjoy the intramural privileges, provided they comply with the intramural rulings. Participation in these activities is entirely voluntary, but they are very popular because they provide an opportunity for every man to enter into competition and recreation in those sports which he enjoys most.

The work of the Physical Education Department of the Woman's College is designed to give the students of that college an appreciation

of the value of activity for general physical well-being, skill in one or more activities which can be enjoyed as recreation during and after college, a well-developed and well-coordinated body, and a knowledge of good posture and efficient handling of the body in everyday activities. To this end, students are allowed to choose from a large number of activities, including individual, dual and team sports, swimming, and several types of dancing. Each student during her two years of required physical education must elect one course in dance and those students who are unable to pass the swimming test must take one course in swimming before graduation. At the mid-point in the fall semester of the freshman year, the activity course ends and all freshmen take two periods a week of body mechanics and one of social hygiene for the remainder of the semester.

The Dance Group, the Swimming Club, and the other sports clubs run by the Woman's Athletic Association give opportunities for all students to take part in the types of intramural activities most interesting to them. The swimming pool, tennis courts, and other athletic equipment are available to all students for use at specified times.

In order to meet certain hygienic aspects of physical education and intramural athletics, the University has made available for all students, in addition to facilities for physical activity and recreation, the following equipment and services:

1. (a) MEN. A regulation uniform: shirt, trunks, supporter, socks, sweat clothes, and towel.
(b) WOMEN. Gym suit, dance costume, bathing suit, warm-up suit.
2. Provision for locker and handling of uniform.
3. The laundering of uniform and towel as needed.

The privileges and services listed above are available to all students who pay full fees, as long as they comply with the rules and regulations established for the care and handling of the equipment.

THE INTERCOLLEGIATE ATHLETIC PROGRAM: The program, controlled entirely by the University, consists of the organization and training of representative freshman and varsity teams in football, baseball, basketball, track, cross country, golf, lacross, soccer, swimming, tennis, and wrestling.

The program is under the supervision of the Athletic Council, composed of seven members. Three of the seven are appointed from the faculty as follows: one member from the Officers of General Administration, one from the Officers of Educational Administration, division of the Colleges, and one from the Officers of Instruction of the undergraduate colleges. From this group the President of the University appoints the faculty chairman, who serves as chairman of the Athletic Council and of its executive committee.

Four of the seven members are selected from the alumni. One of the four, a University Trustee, an alumnus, and a member of the

Board's standing Committee on Physical Education and Athletics, is appointed not less frequently than every three years by the chairman of the Board of Trustees. The remaining three, who may not succeed themselves, are elected annually by the general Alumni Association for terms of three years. The Director of Alumni Affairs serves *ex officio* as secretary of the Council and of the executive committee.

The three faculty members of the Athletic Council constitute a committee which alone has the responsibility of enforcing the scholarship and athletic requirements of the University for participation in intercollegiate sports. The athletic eligibility rules are those of the Atlantic Coast Conference.

The executive committee of the Athletic Council is composed of the faculty chairman of the Council, one other faculty member of the Council and one alumni member of the Council. The executive committee of the Council recommends to the President of the University persons to serve as Director of Athletics and as coaches in the various sports. The election of such persons, however, rests solely with the Board of Trustees of the University or with its Executive Committee on recommendation of the President of the University. The executive committee of the Council recommends to the Athletic Council athletic schedules and the award of insignia of merit earned by members of the athletic teams. However, decisions with respect to the same rest solely with the Athletic Council subject to approval of the President.

Each of the four undergraduate classes selects annually, for terms of one year, a member of each respective class to serve in an advisory capacity to the Athletic Council upon call of the faculty chairman on the matter of awarding insignia of merit.

All funds arising from athletics are handled entirely by the Treasurer of the University. An audit of the receipts and disbursements of these funds is made annually by the official auditors of the University and a report thereof made annually to the Executive Committee of the Board of Trustees.

THE DUKE STUDENT UNION: All students of Trinity College, the College of Engineering, and the Woman's College are members of the Student Union. The Union Building, located on the West Campus, is the student center. In one section the alumni offices, dining facilities, University store, grill, soda fountain, post office, barber shop, bank, and ball room are housed. In the other there are student organization offices; meeting rooms; information center; music, television, reading, and Town Boys' lounge; and a recreational area. Similar facilities for services and activities for the Woman's College are provided on that campus.

The Union has as its stated purpose "to stimulate, promote, and develop the social, recreational, cultural, educational, and spiritual activities of the students of Duke University." This purpose is carried

out through a broad program of social and cultural recreation adapted to the leisure-time interests and needs of the campus. This program is administered by a Board of Governors composed of ten students and the Director of the Student Union. Numerous activity committees plan and work under the supervision of the Board of Governors.

STUDENT ACTIVITIES OFFICES: The Student Activities Offices, established for the purpose of guiding and coordinating the activities of the various student organizations, are under the supervision of the Director of the Student Union on the West Campus and the Dean of Undergraduate Women on the East Campus. The Offices cooperate with the University Treasurer's Office in providing banking service and advice with regard to budgeting, accounting, and auditing. Permanent records of all financial activities of organizations are kept here. These Offices, in cooperation with the University Purchasing Department, also serve in the capacity of purchasing agent for affiliated student organizations. There is no charge for this service.

The West Campus Student Activities Office publishes the weekly Calendar of Duke University and also acts as the coordinating center for the scheduling of events on both campuses.

STUDENT PUBLICATIONS: Student publications of the University are under the control of a Publications Board, which is constituted as follows: three members from the University staff and two from the alumni, appointed by the President; six men from the junior and senior classes, elected by the students in Trinity College and the College of Engineering; four women from the junior and senior classes, elected by the students in the Woman's College; and four editors and four managers of student publications, *ex officio* members without voting power. No student publications can be started at the University without the approval of the Board.

The four publications of campus-wide interest are the *Archive* (monthly); the *Chanticleer* (annual); the *Chronicle* (semiweekly); *Duke Peer*. The Engineering students issue a professional bimonthly magazine, the *DukEngineer*.

STUDENT BROADCASTING SYSTEM: The student broadcasting system of the University is under the control of a Radio Council, which is constituted as follows: two members from the University staff, appointed by the President; three members from the faculty who serve as engineering, production, and business advisers; three men from the junior and senior classes, including one engineer, elected by the students in Trinity College and the College of Engineering; one woman from either the junior or senior class, elected by the students of the Woman's College; one man from either the junior or senior class, elected by the members of the Student Legislature of the Men's Student Government Association from within the membership of that

body; one woman from either the junior or senior class, elected by the members of the Woman's Student Government Council from within the membership of that body; and four student managers of the student broadcasting system, *ex officio* members without voting power.

STUDENT ORGANIZATIONS: The following organizations are active on the campus: *The Men's Student Government Association of Duke University* comprises all men students in Trinity College and the College of Engineering. Through its officers and a council it initiates policies and oversees matters within the control of the male student body. The council is composed of seven members: four executive officers, attorney general, chairman of the Campus Welfare Committee, and chairman of the Educational Affairs Committee.

The Woman's Student Government Association is similar in character to the men's association. Its council is composed of the officers of the Association, house presidents, house judicial representatives, and president of the Town Girls' Club, class representative, and chairman of the Freshman Advisory Council, *ex officio*.

The Young Men's Christian Association and the *Young Women's Christian Association* are branches of the national student Christian Associations. Each body aims not only to enrich the religious life of its members as individuals but also to promote religious group activity. These organizations carry on extensive activity in the fields of social service, faculty-student relations, forums, and other related projects. Membership in the Student Religious Council relates these organizations to the total religious activities program of the Duke University Church, Interdenominational.

Other organizations and activities include the following: Air Force Club; Arnold Air Society; Bench and Bar Society (Pre-Legal Undergraduates); Chemistry Club; Class of 1957; Class of 1958; Class of 1959; Class of 1960; Commodore Club (N.R.O.T.C. Social Organization); Debate Council; Duke-Charlotte Club; Duke Players; Duke University Religious Council; Duke University Handbook, and Directory; Engineer's Student Council; Hoof 'n' Horn; Independent Dormitory Council; Interfraternity Council; Intramural Athletic Department; Men's Freshman Advisory Council; Pep Board; Pre-Medical Society; Publications Board; Radio Council, Reading Club; Semper Fidelis Society; Shoe and Slipper Club; Sociology Club; Student Religious Council; Student Union Board of Governors; Town Boys' Club; Town Girls' Club; WDBS (campus radio station); Woman's College Student Forum; Women's Athletic Association; Women's Freshman Advisory Council; Women's Pan-Hellenic Council; Young Democrats Club; and the Campus Chest Fund.

The following honorary orders and fraternities have chapters on the campus: National—Alpha Kappa Psi (Economics); Alpha Phi Omega (National Service Fraternity); Delta Phi Alpha (German);

Eta Sigma Phi (Classics); Kappa Chi (Pre-Ministerial); Kappa Delta Pi (Educational); Mu Sigma (Psychology); Omicron Delta Kappa (Leadership—Men); Phi Beta Kappa (Scholarship); Phi Eta Sigma (Freshman Scholarship—Men); Pi Gamma Mu (Social Science); Pi Mu Epsilon (Mathematics); Pi Sigma Alpha (Political Science); Sigma Delta Pi (Spanish); Sigma Pi Sigma (Physics); Sigma Xi (Science); Tau Kappa Alpha (Forensic); Tau Psi Omega (French).

Local—Ivy (Scholarship—Freshman Women); Delta Phi Rho Alpha (Athletic—Women); Varsity "D" Club (Athletic—Men); Beta Omega Sigma (Leadership—Sophomore Men); Sandals (Leadership—Sophomore Women); Order of Hippocrates (Pre-Medical); Phi Kappa Delta (Leadership—Women); Red Friars (Leadership—Senior Men); White Duchy (Leadership—Senior Women).

Engineering (Professional)—American Institute of Electrical Engineers; the American Society of Civil Engineers; and the American Society of Mechanical Engineers. Engineering (Honorary)—Tau Beta Pi (Engineering national honor society); Eta Kappa Nu (Electrical engineering national honorary society); Pi Tau Sigma (Mechanical engineering national honorary society); Order of St. Patrick (Leadership).

Local musical organizations available to qualified members are: Chamber Orchestra; Concert Band; Duke Ambassadors; Madrigal Singers; Marching Band (Men); Men's Glee Club; Men's Triple Quartet; Symphony Orchestra; University Chapel Choir; Women's Glee Club.

The following national social fraternities have chapters on the campus: Alpha Tau Omega; Beta Theta Pi; Delta Sigma Phi; Delta Tau Delta; Kappa Alpha; Kappa Sigma; Lambda Chi Alpha; Phi Delta Theta; Phi Kappa Psi; Phi Kappa Sigma; Pi Kappa Alpha; Pi Kappa Phi; Sigma Alpha Epsilon; Sigma Chi; Sigma Nu; Sigma Phi Epsilon; Tau Epsilon Phi; Theta Chi; Zeta Beta Tau.

The following national social sororities have chapters on the campus: Alpha Chi Omega; Alpha Delta Pi; Alpha Phi; Alpha Epsilon Phi; Delta Delta Delta; Delta Gamma; Kappa Alpha Theta; Kappa Delta; Kappa Kappa Gamma; Phi Mu; Pi Beta Phi; Sigma Kappa; Zeta Tau Alpha.

Honors and Prizes



HONORS: To be eligible for Honors a student must earn, during the year, credit for at least the minimum academic load permitted by the college in which he is registered. All semester hours on which a student receives a grade are counted in the determination of Honors. Students in the freshman, sophomore, and junior classes who earn an average of at least three and one-half quality points per semester hour are given Honors.

The degree of Bachelor of Arts or of Bachelor of Science with distinction is conferred in accordance with the following rules:

To be eligible for general Honors at graduation a student must have completed in residence a minimum of ninety semester hours. Those students who earn an average of at least three and one-half quality points per semester hour are recommended for a degree *magna cum laude*. Those who earn an average of at least three and three-fourths quality points per semester hour are recommended for a degree *summa cum laude*.

Graduation with distinction in his major department is awarded to the student who, in the opinion of the department and of a special committee of the faculty, has demonstrated exceptional achievement in the area of his special interest.

MEDALS AND PRIZES: *The Wiley Gray Medal* was established by the late Robert T. Gray, Esq., of Raleigh, North Carolina, to be awarded annually in memory of his brother. It is given for the graduating oration that shall be, in the opinion of a committee, the best, with respect to both declaration and composition.

The Debate Council authorizes the awarding of medals to members of the graduating class who have represented the University in at least two intercollegiate debates. The medals are given by the local chapter of the Tau Kappa Alpha Fraternity.

The Robert E. Lee Prize is the gift of The Reverend A. W. Plyler, of the Class of 1892, and Mrs. Plyler. The sum of \$50 is awarded annually at Commencement, preferably to that member of the senior class of Trinity College or the College of Engineering who, in character and conduct, in scholarship and athletic achievement, in manly virtues and capacity for leadership, has most nearly realized the standards of the ideal student. The Vice President in the Division of Student Life, the Graduate Manager of Athletics, and the President of the Student Council constitute a committee to draft and adopt regulations governing the award.

Alpha Kappa Psi Medallion. Beta Eta Chapter of Alpha Kappa Psi, a professional fraternity in commerce, awards annually the Alpha Kappa Psi Scholarship Key to the male senior student pursuing a degree in the Department of Economics and Business Administration who has attained the highest scholastic average for three years of collegiate work in this University.

Medal of the North Carolina Association of Certified Public Accountants. The North Carolina Association of Certified Public Accountants annually awards a medal to the senior who, in the judgment of his instructors, is the most outstanding student in accounting in his graduating class.

Julia Dale Prize in Mathematics. This is a prize of books given annually to the undergraduate who shows the greatest proficiency in the study of calculus.

The Milmow Prize, consisting of one year's subscription to the *Electrical World*, is awarded each year to that student from North or South Carolina graduating in the Department of Electrical Engineering who, in the opinion of the faculty of that department and as shown by his grades, has made the most progress in electrical engineering during his last year in college.

The Tau Beta Pi Prize. The North Carolina Gamma chapter of Tau Beta Pi, national honorary engineering fraternity, awards each year a suitable prize, such as an engineering handbook, to a sophomore student in engineering for outstanding scholastic achievement during the freshman year.

The Phi Lambda Upsilon Prize. Phi Lambda Upsilon, honorary chemical society, yearly awards a suitable prize to an outstanding junior who is majoring in chemistry. The recipient's name is inscribed on a plaque displayed in the Chemistry Library.

The Pegram Chemistry Club Prize is awarded in the spring of each year for scholarship in chemistry, physics, and mathematics. The prize consists of a one-year junior membership in the American Chemical Society and a one-year subscription to either the *Journal of the American Chemical Society* or *Industrial and Engineering Chemistry*. To qualify for this prize, the student must (1) be enrolled as an undergraduate of Duke University and (2) be taking or have taken a fourth-year chemistry course. The winner of this prize is selected by a committee consisting of at least one faculty member and at least two members of the Pegram Chemistry Club; the selection is based on the quality-point average for all courses taken in chemistry, physics, and mathematics. In case of a tie equal awards are given.

The Erasmus Club Prize in the Humanities. The Erasmus Club, founded in 1925, a group of Duke faculty members interested in research in language, literature, and the arts, seeks to stimulate interest and study in these fields. To encourage Duke students in this

field, the Erasmus Club has established an annual prize amounting to \$25.00, for the best original essay by an undergraduate which embodies the results of research, criticism, or evaluation in some subject in the humanities. Prospective competitors should consult some member of the faculty, preferably their major professor. Essays must be type-written and must be submitted to the president of the club before the first of April. The club reserves the right to withhold the prize in case there are no essays of acceptable quality.

The Anne Flexner Memorial Award in Creative Writing has been established by the friends of the family of Anne Flexner, who graduated from Duke in 1945. It consists of fifty dollars in cash and a book bearing the Anne Flexner Memorial Award bookplate. The award is given annually for the best piece of creative writing submitted by a Duke undergraduate. The competition is limited to short stories (5,000-word limit), one-act plays (5,000-word limit), poems (100-line limit), and informal essays (3,000-word limit). Only one manuscript may be submitted by a candidate, and manuscripts must be delivered to the English Office, Room 325 Allen Building, before April 15.

The William Senhauser Prize is given by the mother of William Senhauser in memory of her son, a member of the Class of 1942, who lost his life in the Pacific Theatre of War on August 4, 1944. The award is made annually to the sophomore or junior in Trinity College or the College of Engineering who has made the greatest contribution through participation and leadership in intramural sports. The winner of this prize is chosen by a committee selected by the President of the University.

The *Friends of Duke University Library* offer three prizes of \$25.00, \$15.00, and \$10.00, in an annual contest open to all undergraduate students for the best book collections acquired during their college years. The contest is supervised by the Undergraduate Committee of the Friends of the Library, which announces each fall the terms of the award. Inquiries may be directed to the Curator of Rare Books. Collections entered in the contest are exhibited each spring in the General Library, and the prizes are awarded on the basis of the student's collection and a personal interview to determine the overall planning and objectives of his collecting activity, and his familiarity with his own books and the general field of his collecting interest.

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BULLETIN
OF
DUKE UNIVERSITY



The School of Nursing

ANNOUNCEMENTS FOR 1957-1958

VOLUME 29

April, 1957

NUMBER 6

Annual Bulletins

For GENERAL BULLETIN of Duke University, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF UNDERGRADUATE INSTRUCTION, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE COLLEGE OF ENGINEERING, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES, apply to *The Dean of the Graduate School*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF FORESTRY, apply to *The Dean of the School of Forestry*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF LAW, apply to *The Dean of the School of Law*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF MEDICINE, apply to *The Dean of the School of Medicine*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF NURSING, apply to *The Dean of the School of Nursing*, Duke University, Durham, N. C.

For BULLETIN OF THE DIVINITY SCHOOL, apply to *The Dean of the Divinity School*, Duke University, Durham, N. C.

For BULLETIN OF THE SUMMER SESSION, apply to *The Director of the Summer Session*, Duke University, Durham, N. C.

Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

BULLETIN
OF
DUKE UNIVERSITY

THE SCHOOL OF NURSING



1957-58

DURHAM, NORTH CAROLINA
1957

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Calendar of the School of Nursing and of the Colleges



SUMMER TERM OF THE SCHOOL OF NURSING AND SUMMER SESSION OF DUKE UNIVERSITY

1957

May	27	Monday. Clinical instruction begins for Summer Term for pre-registered students in School of Nursing.
June	11	Tuesday. Last day for registration in Summer Session courses.
June	12	Wednesday. Instruction begins in all courses in first term of Summer Session and in Chemistry 50.
June	22	Saturday. A holiday. No Summer Session classes meet.
July	4	Thursday. All classes meet.
July	6	Saturday. A holiday. No Summer Session classes meet.
July	16, 17	Tuesday, Wednesday. Final examinations for first term, Summer Session courses.
July	19	Friday. Registration for new students, second term, Summer Session. Final examination for Chemistry 50.
July	20	Saturday. Instruction begins in all second term, Summer Session courses.
August	3	Saturday. A holiday. No Summer Session classes meet.
August	17	Saturday. A holiday. No Summer Session classes meet.
August	23, 24	Friday, Saturday. Final examination for all 3 semester-hour Summer Session courses.

The Academic Year 1957-58

1957

September	12	Thursday, 7:30 P.M. Orientation begins for all entering Freshmen and for new students with advanced standing.
September	16	Monday. Registration and matriculation of students who have not pre-registered. Fall semester clinical courses begin.
September	19	Thursday. Fall semester classes in other than clinical courses begin.
November	4	Monday. Last day for reporting mid-semester grades.
November	27	Wednesday, 5:00 P.M. Thanksgiving recess begins for Freshmen and Sophomore students.
November	28	Thursday. A holiday.
November	29, 30	Friday, Saturday. Clinical classes for Juniors and Seniors will meet as scheduled.
December	2	Monday, 8:00 A.M. All classes are resumed.
December	11	Wednesday. Founder's Day.

December 21 Saturday, 12:30 P.M. Christmas recess begins for Freshmen and Sophomore students.

1958

January 6 Monday, 8:00 A.M. All classes are resumed.
 January 11 Saturday, 12:30 P.M. Fall Semester classes in other than clinical courses end.
 January 14 Tuesday. Final examinations begin.
 January 24 Friday. Final examinations end.
 January 26 Sunday. Fall semester clinical courses end.
 January 27 Monday. Clinical instruction begins for Spring term.
 January 30 Thursday. Spring semester classes in other than clinical courses begin.
 March 12 Wednesday. Last day for reporting mid-semester grades.
 March 22 Saturday, 12:30 P.M. Spring recess begins for Freshmen and Sophomore students.
 March 31 Monday, 8:00 A.M. All classes are resumed.
 May 16 Friday, 5:00 P.M. Spring semester classes in other than clinical courses end.
 May 19 Monday. Final examinations begin.
 May 25 Sunday. Spring semester clinical courses end.
 May 26 Monday. Clinical instruction begins for Summer Term.
 May 29 Thursday. Final examinations end.
 May 31 Saturday. Commencement begins.
 June 1 Sunday. Commencement Sermon.
 June 2 Monday. Graduating Exercises.

Officers of the School for the Year 1957-1958



General Administration

ARTHUR HOLLIS EDENS, Ph.D., LL.D. <i>President of the University</i>	2138 Myrtle Drive
PAUL MAGNUS GROSS, Ph.D. <i>Vice-President in the Division of Education</i>	3816 Dover Road
CHARLES EDWARD JORDAN, A.B., LL.D. <i>Vice-President in the Division of Public Relations</i>	813 Vickers Avenue
HERBERT JAMES HERRING, M.A., LL.D. <i>Vice-President in the Division of Student Life</i>	2010 Myrtle Drive
ALAN KREBS MANCHESTER, Ph.D. <i>Assistant to the Vice-President in the Division of Education and Dean of Trinity College</i>	2016 Myrtle Drive
ALFRED SMITH BROWER, A.B. <i>Business Manager and Treasurer</i>	614 West Campus Drive
GERHARD CHESTER HENRICKSEN, C.P.A. <i>Comptroller and Assistant Treasurer</i>	216 Forest Wood Drive

School of Nursing Administration

ANN MADELINE JACOBANSKY, R.N., M.Ed. <i>Dean of the School of Nursing</i>	Westover Park Apartments
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LELIA ROSS CLARK, R.N., M.A. <i>Director of Nursing Service</i>	Poplar Apartments
LORENE BATES, R.N., B.S. <i>Counselor for Students</i>	Hanes House
MURIEL SCHUMACHER, R.N. <i>Supervisor of Student Health</i>	6 Sylvan Road

Committee on Health Affairs

W. C. DAVISON, James B. Duke Professor of Pediatrics, Dean of the School of Medicine and Chairman of the Committee on Health Affairs.	
ANN M. JACOBANSKY, Professor of Nursing, Dean of the School of Nursing.	
ROSS PORTER, Professor of Hospital Administration and Superintendent of Duke Hospital.	
E. W. BUSSE, Professor of Psychiatry.	
BAYARD CARTER, Professor of Obstetrics and Gynecology.	

LELIA R. CLARK, *Professor of Nursing Service.*

W. D. FORBUS, *Professor of Pathology.*

F. G. HALL, *Professor of Physiology and Pharmacology.*

PHILIP HANDLER, *Professor of Biochemistry.*

JEROME S. HARRIS, *Professor of Pediatrics.*

DERYL HART, *Professor of Surgery.*

J. E. MARKEE, *James B. Duke Professor of Anatomy.*

ELIZABETH MOSES, *Assistant Professor of Nursing, Assistant to the Dean.*

W. P. J. PEETE, *Assistant Professor of Surgery, Assistant to the Dean of the School of Medicine.*

K. E. PENROD, *Professor of Physiology and Pharmacology and Assistant to the Dean of the School of Medicine.*

R. J. REEVES, *Professor of Radiology.*

D. T. SMITH, *James B. Duke Professor of Bacteriology.*

E. A. STEAD, JR., *Florence McAlister Professor of Medicine.*

Four other members of the faculty holding the rank of Assistant Professor or above, by alphabetical rotation.

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MARGARET ANN JACKSON, R.N., B.S.N.

Assistant Instructor in Nursing

Bel Air Apartments

* Sabbatical Leave—June, 1956-May, 1957.

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CAROL MITCHAM, R.N., B.S. <i>Instructor in Obstetric Nursing</i>	25 Rogerson Drive, Chapel Hill
ELIZABETH MOSES, R.N., M.Ed. <i>Assistant Professor of Nursing</i>	108 Buchanan Blvd.
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RUBY WILSON, R.N., B.S.N.E. <i>Instructor in Medical-Surgical Nursing</i>	1420 Broad Street

TEACHING FELLOWS

ANN FORBES, R.N., B.S.
CYNTHIA HUDSPETH, R.N.
LUCILLE KRISTUNAS, R.N.
ANN ELIZABETH TEAGUE, R.N., B.S.N.
MARGARET SMITH WELLS, R.N., B.S.N.

ASSISTANTS

MARION BATCHELDER, R.N. <i>Supervisor, Operating Room</i>	GERALDINE DEGRAVELLES, R.N., B.S. <i>Supervisor, Out-Patient Clinic Nursing Service</i>
GERALDINE BODIE, R.N., A.B., B.S.N. <i>Supervisor, Medical Nursing Service</i>	JOSEPHINE DUNN, R.N. <i>Supervisor, Evening Nursing Service</i>
LOUISE BEARD, R.N., B.S. <i>Head Nurse, Osler Ward</i>	GERTRUDE ELLIOTT, R.N. <i>Supervisor, Obstetric-Gynecology Nursing Service</i>
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* Absent on Leave—September, 1956—August, 1957.

ELINOR GRIFFIN, R.N., B.S.N.E.
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SARAH JEFFREYS, R.N.
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BESS JONES, R.N.
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ANNE FULLER JOHNSTON, R.N.
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MYRTLE LEONARD, R.N.
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DOROTHY NORMA MACMILLAN, R.N.
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ELSIE MOSS, R.N.
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ELINOR OSBORNE
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MARTHA O'SHAUGHNESSY, R.N.
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Supervisor, Evening Nursing Service

HELEN PLYLER, R.N.
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MILDRED SHERWOOD, R.N.
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MILDRED SHINNICK, R.N.
Head Nurse, McDowell Ward

ANNE SNELL, R.N.
Head Nurse, Recovery Room

MARIE STROTHER, R.N.
Head Nurse, Long Ward

MARY STEELE, R.N.
Head Nurse, Howland Ward

JULIA SUITT, R.N.
Supervisor, Emergency Service

NANCY TAYLOR, R.N.
Head Nurse, Cabel Ward

BETTY JEAN BROOKS, R.N.
Head Nurse, Minot Ward

ELENORA TORRENCE, R.N.
Head Nurse, Matas Ward

MYRTLE WHITAKER, R.N.
Head Nurse, Drake Ward

JOHANNA WILLIAMS, R.N.
Head Nurse, Prevost Ward

Instruction in the School of Nursing is given by members of the general faculty and the faculty of the School of Medicine listed in the respective bulletins.

Staff

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ESTHER A. MECCA
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2505 Cascadilla Street

ESTHER M. WELLS
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RUTH L. WALTERS
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Hanes House

Division of Nursing Education

ADMINISTRATION

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Dean of Woman's College

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MARIANNA DUNCAN JENKINS, Ph.D. <i>Associate Dean of Undergraduate Instruction, Woman's College</i>	619 Morehead Avenue
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*THELMA INGLES, R.N., M.A. <i>Director, Division of Nursing Education</i>	1412 Duke Street

Curriculum Committee for School of Nursing

Chairman: Dean Ann M. Jacobansky.
Assistant in Charge of Nursing Education: E. Moses.
Professor of Nursing Service: L. Clark.
School of Nursing Faculty: E. P. Brocker, P. McCaskill.
Department of Sociology: C. Schettler.
Department of Education: W. S. Gehman.
Preclinical Department, School of Medicine: D. T. Smith.
Clinical Department, School of Medicine: E. A. Stead.
Ex-Officio: Dean A. K. Manchester, Dr. K. E. Penrod.

Faculty Committees

Admissions: Jacobansky, Arnett, Brocker, Campbell, McCaskill, Moses, Parker, Wilson, Bates, Schumacher, Weller.
Educational Planning: Moses, Campbell, Clark, Covington, Fauver, Forgione, Kamin, Miller, Mitcham, Wilkinson, Wilson, Goldsmith, Brown (Student), Thompson (Student).
Library: McCaskill, Anderson, Campbell, Mitcham, Whitley (Student), Freeman (Student).
Student Health: Schumacher, Covington, Kamin, Bates.

* Sabbatical Leave June, 1956—May, 1957.

General Information



The School of Nursing offers a four-year program leading to the degree of Bachelor of Science in Nursing. Graduates from this program are eligible to take the State Board Examination for the title of Registered Nurse.

Through changing generations of Duke students the objective has been to encourage each individual to achieve to the extent of his capacities an understanding and an appreciation of the world in which he lives, his relationship to it, his opportunities and responsibilities. As one of the schools within the University system, the School of Nursing shares the advantages of the wider community and contributes to the achievement of this objective. At the same time it offers the special opportunities and responsibilities which belong to its professional students.

The School of Nursing bases its philosophy of education for professional nursing on the belief that the student brings to the school a sound basis for further academic preparation, an understanding of democratic values, an appreciation of the inherent worth of individuals, and a sincere desire to learn nursing. Through the programs of the school, the student is offered learning experiences which will enhance her personal qualities, extend her experiences in group participation, and provide opportunities for acquiring knowledge for applying principles and for practicing skills necessary for effective nursing in our changing and complex society.

The course of study leading to the Bachelor of Science in Nursing degree is planned for one academic year plus six weeks in Summer Session and three calendar years. In this course the student gains a broad understanding of the cultural background of civilization and of her relationship to it, and a foundation for the appreciation and utilization of artistic and aesthetic values. She acquires a foundation in the biological sciences on which to build fundamental concepts of the scientific principles underlying many nursing techniques. She develops insight into the implications of the social factors which affect the patient in his reaction to illness or which handicap and modify his return to health, and acquires some knowledge of the resources available to help solve problems arising in these areas. She acquires a basic understanding of the broader field of public well-being and learns to contribute toward the achievement of a high standard of family and community health.

History

The School of Nursing of Duke University was established in 1931 in association with the School of Medicine of the University and Duke Hospital through the gift of the late James B. Duke. The School of Nursing is a member of the Committee on Health Affairs which promotes the common interests of the Medical School, School of Nursing, and Duke Hospital. A curriculum Committee, appointed by the President with representation from the administration of the University, the undergraduate colleges, the Medical School and the School of Nursing supervises the curriculum of the School of Nursing.

Facilities

The facilities for instruction include the facilities available in the undergraduate, professional, and graduate schools and colleges of Duke University and the clinical facilities of Duke Hospital and of the North Carolina Cerebral Palsy Hospital. The facilities of the Veterans Hospital in Durham may be made available at some future time.

In a wing of Hanes House are located the administrative offices of the School of Nursing, a large classroom seating 100 persons and equipped with audio-visual aids; a small classroom seating 50 persons and equipped with a screen and movie projector, a nursing arts laboratory with equipment for nursing practice for sixteen students, a conference room for faculty committees, small discussion groups and student council meetings. The School of Nursing also uses the laboratories of the Medical School for courses in science and classrooms in the hospital for clinical nursing courses.

A reference library of 3,841 books and periodicals of special interest to students majoring in nursing is located in Hanes House. Students may use the general libraries on the East and West Campuses and the Duke Hospital Library. A collection of visual aids including films is being assembled with an index in the library for the use of students and instructors in the School of Nursing.

Duke Hospital has every modern convenience for the diagnosis, proper nursing care, welfare and comfort of the patients including 670 hospital beds, 30 bassinets, a large public out-patient department, a large private diagnostic clinic with offices and examining rooms for the doctors who serve on the staff of the hospital. There are very close relationships established between the hospital and the Health Departments in North Carolina. A system for referral of patients to the nursing service of the Health Departments has been established between the supervisors of the nursing service in the hospital and the nursing service of the Health Department.

The beds in Duke Hospital are assigned to the various services as

follows: Medicine, including dermatology and neurology, has 195; surgery, including urology, otolaryngology, ophthalmology, and orthopaedics, 325; obstetrics, 37; and 30 bassinets; neuropsychiatry 30; and pediatrics, 83. There are 300 beds in private and semiprivate rooms included in the figures above; 19 air-conditioned operating rooms, 2 obstetric delivery rooms. Except for emergencies, all patients are admitted to the hospital from either the out-patient clinic or the private diagnostic clinic.

The hospital has been approved for internships and residencies by the Council on Medical Education and Hospitals of the American Medical Association and is approved by the Joint Commission on Accreditation of Hospitals.

The out-patient department has an average of 350 visits per day. All services including psychiatry carry on an active program in the out-patient departments. Students are assigned to the out-patient department during their program in the School of Nursing. The first assignment is in the first year, to give the student some knowledge of the background of her patients; subsequent assignments are planned concurrently with the experience on each service.

The Summer Session

The programs in the School of Nursing include courses in the Summer Session each year. Students in the School of Nursing have their courses approved in the School of Nursing and pre-register with the Summer Session office. Students from other colleges and universities who are admitted to the School of Nursing with advanced standing are expected to enroll in the Summer Session to make up deficiencies. Arrangements for registration are made through the office of the Dean of the School of Nursing.

The Summer Session of 1957 will include two terms: Term I, June 11 to July 17, Term II, July 19 to August 24. By attending both terms it is possible for a student to earn as many as twelve semester hours of credit.

While the basic purpose of the Summer Session is to serve the academic and the professional requirements of those who are interested in their own educational advancement, the University recognizes the need of, and provides for, a varied recreation program both athletic and social.

University fees are charged at the rate of \$15 per semester hour for those admitted with advanced standing. Board at Duke Hospital is \$10.00 per week per person, room is \$5.25 per week for each occupant of a double room, and laundry is \$0.50 a week. A bill is sent to all pre-registered students to permit payment in advance.

Awards

THE FLORENCE NIGHTINGALE PLAQUE: The Florence Nightingale plaque is awarded to a graduating student by the Alumnae Association for leadership, scholarship and nursing skill.

THE MOSELEY AWARD: The Moseley Award of \$25.00 is given to the student in the senior class who has shown the most skill in Nursing Arts throughout her program in the School of Nursing.

Student Government Association

The purpose of this organization is to regulate all matters pertaining to the life of women of Duke University School of Nursing not under the jurisdiction of the faculty; to increase a sense of individual responsibility; and to cooperate with the faculty in creating and maintaining high ideals for the nurses of the University.

THE HONOR SYSTEM: The purpose of the Honor System is to secure the cooperation of the student body in maintaining honorable conduct in all relations of student, professional and social life. It applies to every student in the School of Nursing. The Honor System is a vital directive force in all phases of each student's life and is a major working part of the Student Government Association.

Santa Filomena

Santa Filomena, the Senior Honorary of the Duke University School of Nursing, was organized in April, 1944, under the sponsorship of the 1943 class. The purpose of this organization is to recognize achievement and promote leadership.

The members are chosen from the rising Senior Class and are publicly tapped by the old members at the first meeting of the SGA in their senior year, the number chosen not exceeding nine or being less than five. Each candidate must show recognized qualities of leadership or must have made some contribution toward the betterment of the School of Nursing. She must have demonstrated superior nursing abilities and her scholastic record must be C or above throughout her first two years.

Santa Filomena strives for better interclass relations, and to promote better nursing and higher nursing standards. The specific objectives are chosen by the members each year. All proceedings of the meetings of this organization are held in secrecy as are all ceremonies except the public tapping of the new members. The Santa Filomena's flower is the white lily and the members wear a small gold Florence Nightingale lamp.

Alumnae Association

The Alumnae Association was formed for the purpose of rendering mutual help and improvement in professional work, and for the promotion of good fellowship among the graduates of the School.

The Alumnae Association cooperates with the North Carolina State Nurses' Association and the American Nurses' Association in working for the professional and educational advancement of nursing.

Alumnae Notes, a quarterly news publication, furnishes items of interest to members of the Association.

Admission



Candidates may qualify for admission as members of the freshman class or as students with advanced standing. Since the enrollment is limited, the Committee on Admissions selects students who, in its judgment, are best qualified to benefit from the educational advantages which the school offers. The Committee bases its decision on the academic record of the candidate, on test scores, and on satisfactory evidence of good character and general fitness for college life at Duke. A visit to the campus for a personal interview with members of the faculty is of material benefit to the candidate and the Committee. The Admissions Committee must have on file the records indicating the fulfillment of the following requirements before considering an applicant.

1. Graduation from high school with fifteen units of credit as indicated.
2. Aptitude tests.
3. Three recommendations.
4. Interviews.
5. Transcript of college courses for those who have attended college.

Specific Requirements

I. All applicants for admission to the School of Nursing must present at least fifteen acceptable units of secondary school credit. A unit of credit is allowed for a course of study pursued throughout an academic year at an accredited secondary school, if the course has been completed satisfactorily.

1. Twelve units must be in English, foreign language, history and social studies, mathematics, and natural science; and must include:
 - (a) English—3 units.
 - (b) Algebra—1 unit.
 - (c) Plane geometry—1 unit.
2. The three remaining units are elective and may be selected from those subjects for which the school allows credit toward graduation; but it is recommended that they also be selected from the five subject fields listed above.

Other units offered in subjects not included in this list will be considered for acceptance on the basis of full statements transmitted with the applicant's record from the school recommending her.

II. Satisfactory scores on a battery of aptitude tests, either the Scholastic Aptitude Test or the program of tests administered by Duke University.

III. Three recommendations, two of which must come from recent high school or college instructors.

IV. Interviews with two members of the Duke University School of Nursing faculty, whenever possible.

V. Evidence of good health will be requested after the applicant is considered for acceptance. Final acceptance will be contingent on a complete physical examination given at Duke Hospital during the Orientation Period. This examination also includes a chest x-ray, blood and urine studies and skin tests.

ADMISSION TO ADVANCED STANDING IN THE SCHOOL OF NURSING: An applicant for advanced standing must have fulfilled the equivalent of the requirements for admission, must present official certificates of all work completed in other institutions, and must have an honorable dismissal from each institution previously attended. Advanced standing candidates who have previously taken the Scholastic Aptitude Test of the College Entrance Examination Board should request the Board to send a report of their test scores to the Director of Admissions. All others may be advised to take the Scholastic Aptitude Test or the program of tests administered by the Duke University Bureau of Testing and Guidance, as recommended for freshman candidates. Credit for work completed will be determined in relation to the curriculum requirements of the School of Nursing. Applicants admitted with advanced standing to the second year may make up deficiencies for admission by attending the Summer Session.

Graduate nurses may be admitted by transfer into the basic degree program provided they meet the admission requirements. In addition, selection will also be based on previous performance in Nursing, as well as on satisfactory results on the Graduate Nurse Qualifying Examination.

Applicants for advanced standing in the School of Nursing should present, as far as possible, subjects corresponding to those required by the School. They may not, during their first semester, register for more than the minimum number of hours required of the class which they enter, except by permission of the Dean of the School of Nursing.

Transfer credits are tentatively evaluated pending the completion of two semesters of work in residence. To validate the total provi-

sional transfer credits the student must earn at least an average of C in a normal load of work. Transfer grades of C or above are rated at two quality points per semester hour when validated. Courses in which grades of less than C have been earned are not acceptable for transfer credit.

ADMISSION PROCEDURE: Application for admission should be made to the School of Nursing, Duke University, Durham, North Carolina. Application forms and instructions will be sent to the candidate. It is the responsibility of the candidate to see that these forms are properly executed and, together with other requested material, sent promptly to the Office of Admissions.

Application prior to the final year of the secondary school course is not required. Formal steps looking toward admission should be initiated, however, early in the senior year and not later than February 1. Candidates for admission to the School of Nursing normally will receive notification of the decision of the Committee on Admissions by May 1.

READMISSION OF FORMER STUDENTS: A student who, following withdrawal from college, desires to return should apply to the Committee on Admissions. When applying for readmission the student should make a detailed statement of his or her activities since leaving Duke University.

The maximum amount of credit acceptable from a junior college is 60 semester hours, exclusive of physical education. No credit is given for work completed by correspondence, and credit for no more than six semester hours is allowed for extension courses. Any extension work accepted must be approved through the dean.

Financial Information and Living Accommodations



FEEES paid by students and nursing services of the students to the hospital cover only a part of the cost of their instruction and maintenance and the operation of the University. Income from endowment and contributions from alumni, alumnae, and other public-spirited men and women meet the balance.

Fees and Estimated Expenses

A registration fee of \$20.00 is required of all new students. This fee is payable only once; it is not refundable. The general fee is in lieu of special fees usually charged for matriculation, use of laboratories, student health service, commencement, etc. One-half of the tuition and general fees are payable at the beginning of each semester.

	<i>First Year</i>	<i>Summer Session 6 Weeks</i>	<i>Second Year</i>	<i>Third Year</i>	<i>Fourth Year</i>
Tuition	\$ 650.00		\$ 350.00	\$350.00	\$350.00
General Fee	150.00		75.00	75.00	75.00
Room Rent	210.00	\$ 31.50	210.00		
Board	400.00	60.00	400.00		
Laundry	20.00	3.00	20.00		
Books	40.00	10.00	40.00	40.00	10.00
Activities	15.00		15.00	15.00	15.00
Uniform		79.92			13.70
Room Key Deposit	1.00				
	<u>\$1,486.00</u>	<u>\$184.42</u>	<u>\$1,110.00</u>	<u>\$480.00</u>	<u>\$463.70</u>

A student will not attend classes unless she has complied with all regulations concerning registration and payment of charges for the term.

Payment of uniforms is made directly to the uniform company. Each student is responsible for payment of necessary replacements. After the second year, Duke Hospital provides board, room (double-room occupancy) and laundry in return for nursing service which the student contributes during her assignment in the hospital.

Students may have their bills sent to parents or guardians provided the Treasurer has been notified in writing with sufficient antecedence. Failure of a student or of a parent or guardian to pay bills on the dates scheduled will debar the student from class attendance until her

account is settled in full; subsequent withdrawal does not entitle her to a refund. A student is not considered as a candidate for graduation unless she has settled with the Treasurer for all her indebtedness to the University. A student who has not settled her bills with the Treasurer is not allowed to stand the final examinations of the specific term.

Refunds of tuition and other fees are made to students who withdraw within 14 days after the beginning of the semester. On and after the fifteenth day all fees are considered as earned and no refunds are made.

Students are entitled to one transcript free of charge. Additional copies are supplied at \$1.00 each. Records are not released when the Treasurer's office reports an unpaid account.

Scholarships and Loans

SCHOLARSHIP AWARDS: A limited number of scholarships are awarded annually to students who evidence qualities which might predict excellence in Nursing. Detailed information on scholarships will be sent on request.

LOANS: A number of loan funds have been established for the benefit of the students of Duke University. The most important and largest is the Angier B. Duke Memorial Student Loan Fund, which is administered through an advisory committee of officers of the University. The amount available to be loaned depends upon the income from investments and on the amount repaid on loans previously made to students. The same committee of officers administers the other endowed loan funds of the University.

The committee in approving loans selects those students who, from the standpoint of character, scholastic attainment, personality and degree of financial need, are deserving of consideration.

Residences

Students are housed in residences located near the hospital. Rooms are adequately equipped with blankets and linen, making further provision by the student unnecessary. Life in the dormitories is under the regulations established by the Student Government Association with advice from the faculty. The dormitories Hanes House and Hanes House Annex are planned for comfortable living. A Student Handbook including dormitory regulations is issued to each student.

Students in the basic degree program pay room rental during the first two years. During the first academic year the rental charge for a single room is \$130.00 per semester. The rental charge for a double

room is \$105.00 per person per semester. The charge for laundry for one semester is \$10.00. The rental charges for Summer Session are included under the description of that term on Page 12.

Board during the first year may be secured at the hospital for \$200.00 for the semester and as described under Summer Session for the first summer. Students may prefer to eat at the University cafeterias with multiple choice menus. The cost for the academic year ranges from \$375.00 to \$500.00 depending on the taste of the individual. In the Men's Graduate Center near Hanes House is a cafeteria with multiple choice menus and a Coffee Lounge where sodas and sandwiches are served from 11:30 A.M. to 11:00 P.M. This is closed on Sunday.

During the second year, the charges for room and laundry are for the calendar year payable in equal payments at the beginning of the fall and spring semesters. If a student elects to live off campus for any one term of the second year, charges for subsequent terms will be made at the weekly rate as described for Summer Session.

Board (double-room occupancy) and laundry is provided by Duke Hospital for students after the second year. Charges for a single room will be made at the rate of \$25.00 per term.

General Regulations



Orientation Program

ALL FRESHMEN and transfer students are required to participate in the activities of Orientation Week. The program includes general ability, achievement, and placement tests, orientation lectures, physical examinations, social events, special religious services, registration, and enrollment. New students who miss the whole or a part of the Orientation Program place themselves at a serious disadvantage at the very outset of their college career.

Registration

Students who register in either semester at a date later than that prescribed must pay to the Treasurer a fee of \$5.00. They are counted as absent in the work they have missed in the courses to which they are admitted, and these absences carry the same penalty as do other absences from the course. Changes in courses for reasons not arising within the University require a payment of \$1.00 for each change made. No course may be elected later than one week after the opening of the semester, and no student may be admitted to any class without an official enrollment.

Health Regulations

Before admission to the School of Nursing, a student is required to have a physical examination by the family physician and to be immunized against typhoid fever, diphtheria, tetanus and smallpox. Physical defects, such as defective vision, dental needs, etc., must be corrected before admission to the School.

Before final acceptance, each student is required to pass a physical examination given at the School of Nursing during Orientation Week. Students whose condition needs further observation may be admitted tentatively, but must cancel their application if later findings prove them physically unfit for nursing.

Health Program

The School has general supervision of the student's health. Under the health program, all regularly matriculated students and graduate

nurses who are enrolled full-time in the Basic Degree Program receive full medical and surgical care while in the School.

1. **Physical Examination:** Upon admission each student receives a complete physical examination including a chest x-ray. Thereafter, the physical examination is repeated annually; the chest x-ray semi-annually.

2. **Health Office Care:** A health office is maintained in Hanes House for the purpose of treating any sick student; a physician is in attendance for consultation. Drugs, dressings, laboratory tests and x-rays are provided as needed.

3. **Infirmary Care:** An infirmary is available in the hospital for any non-ambulatory sick student. Admission to the infirmary is arranged through the health office. Hospitalization in the infirmary includes staff nursing, drugs, dressings, x-ray and laboratory tests as needed.

If the student is covered by insurance providing hospital, medical or surgical benefits, the coverage shall be applied to the cost of her care.

First and second year students, and graduate nurses enrolled in the Basic Degree Program who do not secure maintenance provided by the hospital will be required to pay for board while hospitalized. Hospital insurance maintenance may be used to cover this service.

4. **Exceptions:** The health program does not cover private duty nursing, refraction of eyes, treatment of teeth, all chronic or pre-existing conditions such as diseased tonsils, hernias, pilonidal cysts, chronic skin conditions, endocrine disturbances; elective surgery, braces or any orthopaedic appliances; accidents or illness occurring during vacations or while off the campus. Blood used for transfusions must be paid for or replaced.

5. **Psychiatric Consultation:** Advisory consultation with a psychiatrist can be arranged through the Dean of Nursing at no expense to the student. Further psychotherapeutic interviews are not included in the program.

6. **Sick Leave:** Students are allowed a total of twenty-one days sick leave during the three years of the clinical part of the program.

7. **Student health insurance** may be secured through the University at a minimal rate.

General Academic Regulations

QUANTITY CREDIT AND COURSE LOAD: The term of credit used is the semester hour which signifies one recitation a week throughout the semester. Two or three hours of laboratory work are equivalent to one hour of class work. Two semesters of seventeen weeks each constitute the academic year. For the degree of Bachelor of Science in Nursing, credit for 125 semester hours is required.

QUALITY CREDIT: The requirements for the degree are computed in semester hours and in quality points. Quality points are determined by grades as follows: for an A, four quality points for each semester hour; for a B, three quality points for each semester hour; for a C, two quality points for each semester hour; for a D, one quality point for each semester hour; for an F, no quality points. Credit for at least 250 quality points is required for the degree of Bachelor of Science in Nursing.

REQUIREMENTS FOR CONTINUATION IN COLLEGE AND FOR GRADUATION FROM COLLEGE: To continue in college and to graduate, students must, in addition to the requirements listed elsewhere in this Bulletin, pass a minimum number of semester hours, achieve a specified quality point ratio, and in the case of graduation earn a minimum number of quality points. The quality point ratio is calculated by dividing the accumulated number of quality points earned by the accumulated number of semester hours carried (not semester hours passed). These requirements are listed in the following table:

For continuation from	The minimum requirement is
The first to the second year	18 s.h. credit and a q.p.r. of 1.2
The second to the third year	42 s.h. credit and a q.p.r. of 1.4
The third to the fourth year	66 s.h. credit and a q.p.r. of 1.6
The fourth to the fifth year, if needed	90 s.h. credit and a q.p.r. of 1.75

For graduation the minimum requirement is 125 semester hours, 250 quality points and a quality point ratio of 1.9.

In addition to the qualitative standards listed above students must pass a minimum number of hours each semester. Freshmen must pass at least 6 semester hours of work in their first semester and 18 semester hours in their first year; all other students must pass at least 9 semester hours each semester. The University may require a student whose record is considered unsatisfactory to withdraw, although she has met the minimum requirements set forth in this paragraph.

Reports on proficiency in academic work are sent to parents or guardians after the examinations at the end of each semester. In addition, reports on freshmen are mailed at each mid-semester period.

CLASS STANDING: Students to rank as sophomores must have to their credit at least 26 semester hours and 52 quality points; as juniors, at least 56 semester hours and 112 quality points; and as seniors, at least 90 semester hours and a quality point ratio of 1.75.

RESIDENCE REQUIREMENTS: A minimum of 30 semester hours of senior-level work in the School of Nursing or colleges of arts and sciences must be earned in residence.

GRADING, ATTENDANCE, AND EXAMINATIONS: Grading: Grades are reported to indicate the following:

(1) Passed. A, B, C, and D are all passing grades. The letters are intended to indicate the following quality of work. A, exceptional; B, superior; C, medium; D, passing.

(2) Failed. A grade of F indicated that the student has failed the course, and in order to receive credit for the course he must repeat the work in class.

(3) Incomplete. (a) A grade of I may be reported by the instructor if for any reason she is unable to report the final grade at the regular time. (b) Incomplete courses must be completed before the close of the succeeding semester; otherwise the I is recorded as F, and the course must be repeated in class if the student is to receive credit for it.

(4) Absent from final examination. (a) The grade X indicates that the student was absent from the regularly scheduled examination. (b) If absence has been excused by the dean the student may take the examination as arranged by the instructor concerned. (c) If absence from the examination is not excused by the dean, the grade for the course concerned is recorded as F. (d) A student with an X grade who has not obtained a passing grade before the end of the semester following that in which the X was incurred is regarded as having failed in the course concerned and must repeat the work in class in order to receive credit.

ATTENDANCE: Regular and punctual attendance in class work is expected of all students. Weekly reports of all absences, irrespective of class standing, are made by each instructor and filed in the dean's office. No instructor has the authority to excuse a student from class attendance; it is her duty to report all absences and tardies.

The requirements for continuation in college and for graduation from college emphasize the desirability of assumption by the student of responsibility for class attendance. Controls are exercised, therefore, during the first two years of college residence. Thereafter, full responsibility is placed on the student.

(1) Regulations applicable during the first two years of college residence: one unexcused absence per semester hour without penalty is allowed for personal obligations. Sophomores who in a normal schedule make averages of B or above in the preceding semester will be allowed two absences per semester hour for personal obligations, but will in all other respects be subject to the same regulations as other students. The first three tardies in a given course are counted as one absence. Thereafter, each additional tardy is counted as one additional absence.

Absences due to illness when certified by a proper medical official

will be excused. Absences due to authorized representation of the University may be excused. Officials in charge of groups representing the University are required to submit names of those persons to be excused to the dean's office forty-eight hours in advance of the hour when their absences are to commence. Absences due to individual and personal reasons will not be excused.

All absences immediately before and after announced holidays are counted as regular absences, and they result in a loss of two quality points for each absence in each class. Unexcused, consecutive absences, whether excessive or not, result in the loss of quality points as in the case of unexcused, excessive absences. Each excessive or consecutive absence results in the loss of quality points as follows: one quality point for the first absence, two additional for the second, and three additional for the third. When the third unexcused, excessive or consecutive absence occurs, the student is debarred from the course with a loss of six quality points and an F in the course. When the student has incurred twelve absences, excused and unexcused, in any course she is required to drop the course unless the dean and the instructor concerned grant special permission for her to continue in the course.

(2) Regulations applicable after two years of college residence: Responsibility for punctual and regular attendance is placed on juniors and seniors. However, for absences before and after announced holidays two quality points are deducted for each absence in each class. Instructors are expected to refer to the dean for appropriate action any student who in their opinion is causing her work or that of the class to suffer by virtue of absences or tardies.

(3) Regulation applicable during the Summer Session: An undergraduate student who incurs more than three absences in a course (whether excused or unexcused) is ordinarily debarred from the course. Should she be permitted to remain in the course, full credit will not be allowed. The amount of reduced credit will be determined by the director of the Summer Session. Days missed through late registration are counted as absences, and three tardies in a given course are counted as one absence.

An undergraduate degree candidate in Duke University who incurs more than three absences in a course must confer immediately with the dean of the school, who in turn will recommend to the Director of the Summer Session whether the student may continue in the course. A special or unclassified student who incurs more than three absences in a course must confer immediately with the Director of the Summer Session who will determine whether the student may continue in the course.

Leave of Absence

A leave of absence may be granted to a student for a period not to exceed one semester, with the approval of the faculty.

Readmission

Students who are absent for more than one month may be readmitted to the same or to a succeeding class on the decision of the faculty.

Dismissal

The faculty of the School of Nursing may, at any time, place a student on probation or release her from the School if, in its opinion, she does not demonstrate the qualifications necessary for the profession. A student of the freshman class to remain in the school must pass at least six semester hours of work in her first semester and eighteen semester hours with 22 quality points in her first academic year.

Requirements for Degree



The School of Nursing offers a program leading to the degree which is planned to cover a period of four years; one academic year, one summer term and three calendar years. At the completion of this program, the student receives the degree of Bachelor of Science in Nursing and is then eligible for the examinations given by the North Carolina State Board of Nurse Examiners. The School is fully approved by the North Carolina Board of Nurse Registration and Nursing Education.

To fulfill the requirements for the degree of Bachelor of Science in Nursing, a student must complete the program with a C average, must complete 127 semester hours as outlined below, earn 250 quality points, exclusive of Physical Education, and show proficiency in the practice of nursing.

The requirements for the degree of Bachelor of Science in Nursing are based on the principle that the student will derive the maximum benefit if the program includes a broad distribution of studies among representative fields.

For graduation with the degree of Bachelor of Science in Nursing, the following course work or equivalents must be completed.

UNIFORM COURSE REQUIREMENTS	S.H.
English	6
Natural and Biological Science	23
Religion	6
Social Science and History	24
Elective (Literature, Music, Art Philosophy preferred)	6
Physical Education	2
Major (Nursing and related work).....	60
Total	127

These requirements are described in detail below.

ENGLISH, 6 s.h.—This requirement is met by the completion of English 1-2. Students who demonstrate proficiency in English usage may be allowed to substitute 55 or 56 for English 1.

NATURAL AND BIOLOGICAL SCIENCE, 23 s.h.—To satisfy this requirement a student must complete laboratory courses in General Chemistry (3 s.h.), Physiological Chemistry (3 s.h.), Zoology (8 s.h.), Anatomy and Physiology (6 s.h.), and Microbiology (3 s.h.).

RELIGION, 6 s.h.—To meet this requirement 6 semester hours must be chosen from Religion 1, 2, 51, 52, 91, 93, 94, 101, 103, 104, 114, 130, 132, 181, 182.

SOCIAL SCIENCE AND HISTORY, 24 s.h.—To satisfy this requirement students must take Education 88 and 118, Psychology 116 and Sociology 91, 92 and N151.

The remaining 6 s.h. may be selected from History 1-2 or 51-52 and Political Science 11-12 or 61-62 (Students who do not present for entrance 2 acceptable units of History must select History).

LITERATURE, MUSIC, ART, AND PHILOSOPHY, 6 s.h.—This requirement can be satisfied by a total of 6 semester hours in courses in English or American literature, foreign literature courses numbered above 100, literature courses in translation, courses in aesthetics, art, music, and courses in Philosophy (except 48, 103, 104, 109, 199).

PHYSICAL EDUCATION, 2 s.h.—In the School of Nursing, Physical Education is required during the first year and must be completed by the end of the first year.

MAJOR AND RELATED WORK, 60 s.h.—This requirement is met by completing courses in the School of Nursing in accordance with the regulations described.

The work is divided as follows:

FIRST YEAR

<i>First Semester</i>			S.H.	<i>Second Semester</i>			S.H.
Eng	1	Freshman Composition.....	3	Eng	2	Freshman Composition.....	3
Hist	1	Historical Background of or the World Today.....	3	Hist	2	Historical Background of or the World Today.....	3
Pol Sc	11	The American System of Government.....	3	Pol Sc	12	The American System of Government.....	3
Relig	1	The English Bible.....		Relig	2	The English Bible.....	
or				or			
Elective		(Art, Music or Philosophy)	3	Elective		(Art, Music or Philosophy)	3
N	1	Orientation to the Health Field.....	2	Micro	4	Microbiology.....	3
Zool	1	General Zoology.....	4	N	2	Introduction to Nursing...	1
		Physical Education.....	1	Zool	2	General Zoology.....	4
						Physical Education.....	1
			16				18

SUMMER SESSION (6 WEEKS)

First Term

			S.H.
Chem	50	Chemistry.....	3
Ed	88	Educational Psychology....	3
			6

SECOND YEAR

<i>First Semester</i>			S.H.	<i>Second Semester</i>			S.H.
Anat	51	Anatomy.....	3	N	92	Fundamentals of Nursing..	6
Phys	51	Physiology.....	3	Nutr	53	Nutrition.....	3
Chem	51	Physiological Chemistry....	3	Ed	118	Educational Psychology— Developmental.....	3
N	91	Fundamentals of Nursing....	6	Soc	92	General Sociology.....	3
Soc	91	General Sociology.....	3				15
			18				

SUMMER SESSION

<i>First Term (6 weeks)</i>			S.H.	<i>Second Term</i>			S.H.
Elective		(Literature, Philosophy, Art, or Religion 51 or 52....	3	N	95	Introduction to the Field of Social Work.....	3
N	93	Medicine and Surgery (con't. through summer)...	3				
			6				3

THIRD YEAR

<i>First Semester</i>		S.H.	<i>Second Semester</i>		S.H.
N	120 Pediatric Nursing.....		N	130 Obstetric Nursing.....	
or			or		
N	130 Obstetric Nursing.....		N	120 Pediatric Nursing.....	6
or			or		
N	140 Medical & Surgical Nursing including O.R. & Diet Therapy.....	6	N	140 Medical & Surgical Nursing including O.R. & Diet Therapy.....	
Soc. N151	Family Relationships.....		Psych 116	Psychology of Adjustment.	
or			or		
Psych 116	Psychology of Adjustment.	3	Soc. N151	Family Relationships.....	3
		<hr/> 9			<hr/> 9

SUMMER SESSION

	S.H.
N 140 Medical & Surgical Nursing including O.R. & Diet Therapy.....	
or	
N 120 Pediatric Nursing.....	
or	
N 130 Obstetric Nursing.....	6
	<hr/> 6

FOURTH YEAR

<i>First Semester</i>		S.H.	<i>Second Semester</i>		S.H.
N	160 Social Foundations of Nur- sing Education.....	3	N	180 Aspects of Public Health Nursing.....	6
	Religion (above 100 level)...		N	190 Advanced Medical & Sur- gical Nursing with Semi- nar on Nursing Problems.	3
or					
	Elective (above 100 level)...	3			
N	170 Psychiatric Nursing.....	6	or		
or			N	170 Psychiatric Nursing.....	6
N	180 Aspects of Public Health Nursing.....	6	or		
N	190 Advanced Medical & Sur- gical Nursing with Semi- nar on Nursing Problems..	3	N	160 Social Foundations of Nur- sing Education.....	3
		<hr/> 9 or 12			<hr/> 9 or 12

SUMMER SESSION

ADVANCED PRACTICE IN NURSING

Description of Courses—Degree Program

UNDERGRADUATE COLLEGES

EDUCATION

88. EDUCATIONAL PSYCHOLOGY: LEARNING AND MEASUREMENT.—This course and Education 118 constitute a general introduction to the field of Educational Psychology. This course deals with (1) the psychology of learning, including: the nature of the learning process; general principles or laws of learning; the course of learning and forgetting; factors influencing efficiency in learning and retention; and the transfer of training; and (2) measurement, including: the basic concepts in the measurement of intelligence; standardized achievement tests; the extent and significance of individual differences in ability and performance

Opportunity will be afforded for examination and study of a variety of tests of intelligence and achievement. *Either semester. 3 s.h. (E)*

ASSOCIATE PROFESSORS EASLEY AND RUDISILL;
ASSISTANT PROFESSOR GEHMAN

118. EDUCATIONAL PSYCHOLOGY: PSYCHOLOGICAL DEVELOPMENT.—This course traces the psychological development of the individual from infancy to maturity. The principal topics considered are: the interdependence of hereditary and environmental factors in development, the nature of the development process, the establishment of the early basic patterns of behavior, changes and conditions producing these changes throughout childhood and adolescence to maturity, and the origin and treatment of minor behavior disorders. Not open to students who have had Psychology 121 or 126. Prerequisite: three semester hours in psychology or educational psychology. *Either semester. 3 s.h. (E)*

ASSOCIATE PROFESSOR EASLEY;
ASSISTANT PROFESSOR GEHMAN

ENGLISH

L. ENGLISH FUNDAMENTALS.—All freshmen whose scores on the placement tests indicate that they are not ready for English 1 must take this course. Students who fail in English L must repeat the course. Students who have earned credit in English L must also take English 1 and 2. 3 s.h. (w)

ASSISTANT PROFESSOR JORDAN AND MR. GRAVES

1-2. ENGLISH COMPOSITION.—All freshmen are required to take course 1 and course 2.

Students who fail in English 1 or 2 must repeat the course in the following semester. Students in courses 1 and 2 who fail to make an average of "C" or better are strongly advised to earn credit for an additional course in English composition. 6 s.h. (E & W)

PROFESSORS BEVINGTON AND WARD; ASSOCIATE PROFESSORS BOWMAN, FISHER, PATTON, SMITH, SPENCER, AND WHITE; ASSISTANT PROFESSORS BEVINGTON, BUDD, JORDAN, AND POTEAT; DRs. BOWERS, ANDERSON, HENINGER, BROOKS, FRASER, KOTTLER, LANE, MAJOR, REICHARD, SMITH, AND WICKES; MISS LIBBY; MESSRS. BOATWRIGHT, BORNHAUSER, GRAVES, HARGREAVES, McDONALD, MORRIS, REEVES AND VAN FOSSEN.

33. WRITING LABORATORY.—A non-credit course in elementary composition may be required of students who evidence deficiencies in composition as reported by members of the faculty. Students may enter or leave this course at any time, at the instructor's discretion.

ASSOCIATE PROFESSOR HARWELL AND ASSISTANT JORDAN

ENGLISH AND AMERICAN LITERATURE AND LANGUAGE

55, 56. REPRESENTATIVE WRITERS.—The following works are studied in the first semester: Chaucer's Prologue to *The Canterbury Tales* and at least two tales, Shakespeare's *1 Henry IV*, *King Lear*, and one other play, the English Bible (selections), Milton's *Paradise Lost* (selections) and some of the shorter poems; in the second semester: Pope's poems (selections), Fielding's *Joseph Andrews* or *Tom Jones*, selections from Keats's or Wordsworth's poems, selections from Browning's or Arnold's poems, Thackeray's *Vanity Fair* or Hardy's *The Mayor of Casterbridge*, selections from Yeats's poems, two plays by Shaw or a twentieth-century British or American novel. 6 s.h. (E & W)

PROFESSORS BEVINGTON, BLACKBURN, BOYCE, IRVING, SANDERS, AND TURNER;
ASSOCIATE PROFESSORS BOWMAN, MITCHELL, AND PATTON; ASSISTANT
PROFESSORS BEVINGTON AND POTEAT; DRs. BOWERS, FRASER,
KOTTLER, LANE, REICHARD, SMITH AND WICKES

HISTORY

1, 2. HISTORICAL BACKGROUND OF THE WORLD TODAY.—This course is an introduction to the study of modern history with special reference to the

issues in the modern world. Topics selected for emphasis are: the contest between liberty and authority in the modern state; changing economic organization and theory—capitalism and the challenges to it; the problems of peace and war among the states; the changing faith men live and die by. Beginning about 1500 with the rise of the European dynastic states, the story is pursued in the first semester to approximately 1871, and in the second through the two great world wars. The central theme in both semesters is the expansion of the influence of Western Europe throughout the world, with some attention to the rise of the United States as a world power. 6 s.h. (W & E)

Sophomores and juniors are not admitted to this course.

ASSOCIATE PROFESSORS FERGUSON, PARKER, AND ROPP;
ASSISTANT PROFESSOR COLTON; DRs. HOLLYDAY,
TISCHENDORF AND YOUNG

51, 52. HISTORICAL BACKGROUND OF THE WORLD TODAY.—An introductory course for sophomores, juniors, and seniors dealing with the topics indicated in the description of course 1-2. 6 s.h. (W & E)

PROFESSOR CURTIS; ASSISTANT PROFESSORS ACOMB AND
COLTON; DRs. TISCHENDORF AND YOUNG

PHILOSOPHY

49. ETHICS.—An introductory consideration of basic ethical concepts and principles as developed in European and American thought and culture. 3 s.h. (E & W)

PROFESSORS BAYLIS AND NEGLEY; ASSISTANT PROFESSORS BUCK AND WELSH

POLITICAL SCIENCE

11-12. THE AMERICAN SYSTEM OF GOVERNMENT.—An introductory study of the principles and operation of the American government in the light of the present world position of the United States. (Only open to Freshmen.) 6 s.h. (E & W)

ASSISTANT PROFESSOR HALL

[Students completing 11 in the spring semester should take course 62.]

AMERICAN GOVERNMENT AND POLITICS

61-62. AMERICAN AND COMPARATIVE POLITICAL SYSTEMS.—Principles and institutions of modern government, the first semester being devoted to American government, the second to a comparative study of governments in the United States and outside. 6 s.h. (E & W)

ASSOCIATE PROFESSOR SIMPSON; ASSISTANT PROFESSORS
CHEEK, HALL, HANSON AND LEACH

REQUIRED PHYSICAL EDUCATION

Two semester hours to be completed in two semesters are included in the 127 hours required for graduation.

At the beginning of the freshman year, after a series of tests have been given, individual conferences are held and each student is guided into the type of activity she most needs, as determined from the evaluation of the test scores and the results of the conference. This course continues for half the semester after which all freshmen take body mechanics and social recreation for the remainder of the semester.

During the second semester every student will elect two activities from those offered by the Department.

PROFESSOR JULIA R. GROUT; MESDAMES BOOKHOUT,
SMITH, AND WRAY; MISSES EDDY, HOLTON,
LEWIS, SPANGLER AND WOODYARD

PSYCHOLOGY

116. PSYCHOLOGY OF ADJUSTMENT.—The course is planned to give an adequate understanding of problems of adjustment and of mental hygiene. Lectures and discussions cover an application of the principles and findings of normal and abnormal psychology as these relate to the adjustment of the average individual

in our changing society; a survey of the principles of mental hygiene; discussions of current socio-cultural trends significant for individual adjustment. 3 s.h. (w)

ASSISTANT PROFESSOR REICHENBERG-HACKETT

RELIGION

1. THE ENGLISH BIBLE.—A survey of the contents of the Old Testament books in the light of their origin in the history and religion of the Hebrew people. 3 s.h. (E)
PROFESSOR CRUM; ASSISTANT PROFESSOR MANSCHRECK; DRs. DANIELS AND OSBORN; MESSRS. BROWN AND LANGFORD

2. THE ENGLISH BIBLE.—A study of the personalities and literature of the New Testament against their Jewish, Hellenistic and Roman background. Although Religion 1 is not a prerequisite, it will be an aid to the student to complete 1 before taking 2. 3 s.h. (E)
PROFESSORS CRUM AND MYERS; ASSISTANT PROFESSORS MANSCHRECK AND SALES; DRs. DANIELS AND OSBORN; MR. LANGFORD

51. THE ENGLISH BIBLE.—An introductory course in the Old Testament for sophomores and juniors. (See description of Religion 1.) Students may not receive credit for both 51 and 1. 3 s.h. (E)

PROFESSOR MYERS; ASSOCIATE PROFESSOR PHILLIPS; ASSISTANT PROFESSORS BRADLEY AND MANSCHRECK; DRs. DANIELS AND OSBORN; MR. LANGFORD

52. THE ENGLISH BIBLE.—A survey course in New Testament life and literature for sophomores and juniors. (See description of Religion 2.) It will be to the advantage of the students to take Religion 1 or 51 before taking 52. Students may not receive credit for both 52 and 2. 3 s.h. (E)

PROFESSOR MYERS; ASSOCIATE PROFESSOR PHILLIPS; ASSISTANT PROFESSORS BRADLEY AND MANSCHRECK; DRs. DANIELS AND OSBORN; MR. LANGFORD

SOCIOLOGY

91-92. GENERAL SOCIOLOGY.—An introduction to the scientific study of social life; its origin, evolution and organization as illustrated in the study of a number of concrete social problems. 6 s.h. (E & W)

PROFESSOR JENSEN; ASSOCIATE PROFESSOR SCHETTTLER; ASSISTANT PROFESSORS ROY AND WHITRIDGE; MESSRS HOWELL, McNURLEN, AND TUMBLIN

Sociology N151. FAMILY RELATIONS.—This course has two objectives. First, it seeks to familiarize students with those basic facts and problems in family life of which an understanding is essential to successful professional work by nurses. Second, the course seeks to provide students with such information and insights as may aid them in making successful adjustments in their own courtship and marriage. Either semester. 3 s.h.

ASSOCIATE PROFESSOR SCHETTTLER

ZOOLOGY

1. ANIMAL BIOLOGY.—The principles of biology as applied to animals. 4 s.h. (W & E)

ASSOCIATE PROFESSORS HUNTER AND ROBERTS AND STAFF

2. GENERAL ZOOLOGY.—A brief survey of the animal kingdom. Prerequisite: Zoology 1. 4 s.h. (W & E)

PROFESSOR BOOKHOUT AND ASSOCIATE PROFESSOR HUNTER AND STAFF

SCHOOL OF NURSING

BIOLOGICAL AND PHYSICAL SCIENCE

Anat. 51. ANATOMY.—The student gains an understanding and appreciation of body structure and its relation to normal functions in health and abnormal functions in disease. Audio-visual aids are used extensively and in conjunction with laboratory work the anatomical structures are demonstrated on dissected human specimens. 3 s.h.

PROFESSOR MARKEE AND STAFF

Physio. 51. HUMAN PHYSIOLOGY.—A study of the normal functions of the human body with references to their applications in health and disease. 3 s.h.

PROFESSOR F. G. HALL AND STAFF

CHEMISTRY

Chem. 50. CHEMISTRY.—A course in the fundamentals of general inorganic chemistry with particular emphasis on the needs of the student nurse. A brief introduction to organic chemistry. 3 s.h.

ASSOCIATE PROFESSOR TAYLOR

Chem. 51. PHYSIOLOGICAL CHEMISTRY.—This course is designed to aid the student in understanding the chemical mechanism of the human body both in health and in disease. The student also acquires knowledge concerning the chemical basis of diagnosis and therapy. 3 s.h.

ASSOCIATE PROFESSOR TAYLOR

Micro. 4. MICROBIOLOGY.—From the learning experiences included in this course the student is enabled to understand and appreciate her role in the prevention of microbial disease. 3 s.h.

ASSOCIATE PROFESSOR WILLETT

NURSING AND ALLIED ARTS

N2. INTRODUCTION TO NURSING.—A survey of nursing history, with emphasis on contemporary concepts and movements in nursing.

ASSISTANT PROFESSOR MOSES

160N. SOCIAL FOUNDATION OF NURSING EDUCATION.—A survey of major historical, philosophical, and sociological factors which have affected development in Nursing and Nursing Education. The purpose of the course is to give the student a better understanding of the place of nursing in present day society and the responsibilities of the individual nurse toward that society. 3 s.h.

PROFESSOR JACOBANSKY

N1. ORIENTATION TO THE HEALTH FIELD.—An introduction to basic health needs of the community and the agencies and programs designed to meet them. 2 s.h.

ASSISTANT PROFESSOR BROCKER

Nutr. 53. NORMAL NUTRITION AND DIETETICS.—This course considers the nutritive requirements for individuals in different stages of development, and in different occupations. The methods of supplying foods conforming to the individual nutritional needs are given for varying income levels. Actual foods are compared according to their contribution of specific nutrients, and in relation to their place in the daily diet. 3 s.h.

MRS. SHELTON

N91-92. FUNDAMENTALS OF NURSING.—A study of the fundamentals of nursing care as it pertains to individuals and families. The nurse's role in prevention and detection of illness, and treatment and rehabilitation is emphasized. Lectures, discussion, correlated practice. 12 s.h.

ASSOCIATE PROFESSOR INGLES, MRS. STICHT; MISSES COVINGTON, CAMPBELL, MCKELVEY, McDOUGAL, JACKSON, BATES

N93. MEDICINE AND SURGERY.—A study of common medical and surgical conditions with emphasis on etiology, pathology, treatment and related nursing care. 3 s.h.

PROFESSOR STEAD AND STAFF;

PROFESSOR HART AND STAFF

N91-92-93. Includes 4-20 hours per week of correlated clinical experience.

N95. INTRODUCTION TO THE FIELD OF SOCIAL WORK.—An orientation to social work services and how they may be used to meet patients' needs in illness and in rehabilitation. 3 s.h.

ASSISTANT PROFESSOR WIEN

N120. PEDIATRIC NURSING.—This course is designed to help the student understand children, their response to illness, and the therapy involved in their care, so that she can assume her role in child health promotion in the hospital, the home, and the community. A developmental approach is used throughout the course with emphasis on the child as a member of the family. The acute communicable diseases of childhood are included.

MISSES FORGIONE, KOESY, PARKER;

PROFESSOR HARRIS AND STAFF

N130. OBSTETRIC NURSING.—Considers normal and abnormal phases of the reproductive cycle basic to nursing care of the mother and newborn child including the premature infant. The effect of reproduction upon individual and family; community aspects and opportunities for teaching in maternal health promotion. 6 s.h. MISSES ARNETT, MITCHAM, HARBISON; PROFESSOR CARTER AND STAFF

N140. MEDICAL AND SURGICAL NURSING.—A study of nursing care of selected patients; discussion of the principles of surgical aseptic technic basic to nursing practice in the Operating Room; and practice in nutrition in disease. Conferences, discussions, field trips, field experience. 6 s.h. ASSOCIATE PROFESSOR INGLES, MISSES MILLER, WILKINSON, FAUVER, EVANS

N170. PSYCHIATRIC NURSING.—Discussion of the principles of psychiatric nursing and the functions and responsibilities of the nurse in the total care of the psychiatric patient with emphasis on mental hygiene and care and rehabilitation of the mentally ill. 6 s.h. ASSISTANT PROFESSOR SPRING; MRS. BULLOCK
PROFESSOR BUSSE AND STAFF

N180. PUBLIC HEALTH NURSING.—Study of the basic principles of public health nursing concurrent with planned experiences in the community designed to develop skills in family health guidance and work with community resources. 6 s.h. ASSISTANT PROFESSOR BROCKER, MRS. KAMIN

N190. ADVANCED NURSING.—Students selected and study areas of special interest to them. The leadership of the professional nurse and the function of the nurse in disaster situations are explored. Conferences, group discussions, ward rounds, laboratory and clinical experiences. 3 s.h. ASSOCIATE PROFESSOR INGLES, MRS. McCASKILL, MISSES WILSON, DAVENPORT

N120, 130, 140, 170, 180, 190.—Includes 20-40 hours a week of correlated clinical experience.

Master of Science in Nursing



It is anticipated that the degree Master of Science in Nursing with specialization in Medical-Surgical Nursing will be offered in 1957-1958.

The program for advanced study and research in nursing aims at the preparation of the graduate student for advanced level positions in nursing. Clinical experiences which will increase the student's understanding of comprehensive nursing care will be provided in the area of specialization.

The program of study shall include a minimum of 30 semester hours of work to be planned as follows:

Medical-Surgical Nursing.....	12 s.h.
Electives from the Behavioral Sciences.....	12 s.h.
Research thesis.....	6 s.h.

A minimum of one calendar year will be required for completion of this program.

Additional information may be obtained from:

Admissions Office
School of Nursing
Duke University
Durham, North Carolina

BULLETIN
OF
DUKE UNIVERSITY



The School of Medicine

ANNOUNCEMENTS FOR 1957-58

VOLUME 29

April, 1957

NUMBER 6-A

Annual Bulletins

For GENERAL BULLETIN of Duke University, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF UNDERGRADUATE INSTRUCTION, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE COLLEGE OF ENGINEERING, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES, apply to *The Dean of the Graduate School*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF FORESTRY, apply to *The Dean of the School of Forestry*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF LAW, apply to *The Dean of the School of Law*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF MEDICINE, apply to *The Dean of the School of Medicine*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF NURSING, apply to *The Dean of the School of Nursing*, Duke University, Durham, N. C.

For BULLETIN OF THE DIVINITY SCHOOL, apply to *The Dean of the Divinity School*, Duke University, Durham, N. C.

For BULLETIN OF THE SUMMER SESSION, apply to *The Director of the Summer Session*, Duke University, Durham, N. C.

Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

BULLETIN
OF
DUKE UNIVERSITY
THE SCHOOL OF MEDICINE



1956-1957
ANNOUNCEMENTS FOR 1957-1958

DURHAM, NORTH CAROLINA
1957

Foreword

This bulletin is issued for prospective medical students. Admission into any class is made only on the understanding that every decision of the Committee on Health Affairs shall apply to all students, even though it is made subsequently to their enrollment in the School. At frequent intervals the Committee on Health Affairs reviews the records of all students, and those whose progress has been unsatisfactory may be required to leave the School. Only those will be advanced who, in the opinion of the Committee on Health Affairs, give promise of being a credit to themselves and to the School. The next first-year class will be admitted September 16, 1957. For admission requirements and applications, see page 13.



The School of Medicine

Officers of Administration

General Administration

ARTHUR HOLLIS EDENS, Ph.D., LL.D. <i>President of the University</i>	West Campus
WILLIAM HANE WANNAMAKER, A.M., Litt.D. <i>Vice-Chancellor of the University</i>	West Campus
PAUL MAGNUS GROSS, Ph.D. <i>Vice-President in the Division of Education</i>	Hope Valley
CHARLES EDWARD JORDAN, A.B., LL.D. <i>Vice-President in the Division of Public Relations and Secretary of the University</i>	813 Vickers Avenue
HERBERT JAMES HERRING, M.A., LL.D. <i>Vice-President in the Division of Student Life</i>	Myrtle Drive
ALFRED SMITH BROWER, A.B. <i>Business Manager and Treasurer</i>	614 West Campus
GERHARDT C. HENRICKSEN <i>Comptroller</i>	216 Forest Wood Drive

The School of Medicine

WILBURT C. DAVISON, M.D., D.Sc., LL.D., *Dean.*
KENNETH E. PENROD, Ph.D., *Assistant to the Dean.*
WILLIAM P. J. PEETE, M.D., *Assistant to the Dean.*

Committee on Health Affairs

W. C. DAVISON, *James B. Duke Professor of Pediatrics, Dean of the School of Medicine and Chairman of the Committee on Health Affairs.*
ANN JACOBANSKY, *Professor of Nursing and Dean of the School of Nursing.*
ROSS PORTER, *Professor of Hospital Administration and Superintendent of Duke Hospital.*
E. W. BUSSE, *Professor of Psychiatry.*
BAYARD CARTER, *Professor of Obstetrics and Gynecology.*
LELIA R. CLARK, *Professor of Nursing Service.*
W. D. FORBUS, *Professor of Pathology.*
F. G. HALL, *Professor of Physiology and Pharmacology.*
PHILIP HANDLER, *Professor of Biochemistry.*
JEROME S. HARRIS, *Professor of Pediatrics.*
DERYL HART, *Professor of Surgery.*
J. E. MARKEE, *James B. Duke Professor of Anatomy.*
ELIZABETH MOSES, *Assistant Professor of Nursing and Assistant to the Dean of the School of Nursing.*
W. P. J. PEETE, *Assistant Professor of Surgery and Assistant to the Dean.*
K. E. PENROD, *Professor of Physiology and Pharmacology and Assistant to the Dean.*
R. J. REEVES, *Professor of Radiology.*
D. T. SMITH, *James B. Duke Professor of Bacteriology.*
E. A. STEAD, JR., *Florence McAlister Professor of Medicine.*
Four other members of the faculty holding the rank of Assistant Professor or above, by alphabetical rotation.

1957

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1958

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School of Medicine Calendar

1957-1958

1957

January	7	Monday—Registration of students, and Winter Quarter begins.
February	9	Saturday—Anatomy for first-year students ends.
February	11	Monday—Biochemistry for first-year students begins.
March	23	Saturday—Winter Quarter ends.
April	1	Monday—Registration of students, and Spring Quarter begins.
April	13	Saturday—Spring vacation for first-year students begins.
April	22	Monday—Easter Monday: a holiday.
April	22	Monday—Spring vacation for first-year students ends.
June	3	Monday—Commencement Exercises.
June	15	Saturday—Spring Quarter ends.
July	1	Monday—Registration of students, and Summer Quarter begins.
July	4	Thursday—Independence Day: a holiday.
September	2	Monday—Labor Day: a holiday.
September	14	Saturday—Summer Quarter ends.
September	16	Monday—Registration of students, and Autumn Term begins.
November	16	Saturday—End First Nine-Week Term.
November	18	Monday—Begin Second Nine-Week Term.
November	28	Thursday—Thanksgiving: a holiday.
December	7	Saturday—End First Twelve-Week Term.
December	9	Monday—Begin Second Twelve-Week Term.
December	11	Wednesday—Founder's Day.
December	21	Saturday—Christmas Recess begins.

1958

January	6	Monday—Classes resume.
February	1	Saturday—End Second Nine-Week Term.
February	3	Monday—Begin Third Nine-Week Term.
March	15	Saturday—End Second Twelve-Week Term.
March	17	Monday—Begin Third Twelve-Week Term.
April	5	Saturday—End Third Nine-Week Term.
April	5-14	Spring Vacation for third and fourth-year students.
April	7	Easter Monday: a holiday.
April	14	Monday—Begin Fourth Nine-Week Term.
April	12-21	Spring Vacation for first and second-year students.
June	2	Monday—Commencement Exercises.
June	14	Saturday—End Third Twelve-Week and Fourth Nine-Week Terms.
June	30	Monday—Begin Nine-Week Summer Term.
July	4	Friday—Independence Day: a holiday.
August	30	Saturday—End Nine-Week Summer Term.
September	15	Monday—Begin Autumn Terms.
November	15	Saturday—End First Nine-Week Term.
November	17	Monday—Begin Second Nine-Week Term.
November	27	Thursday—Thanksgiving: a holiday.
December	6	Saturday—End First Twelve-Week Term.
December	8	Monday—Begin Second Twelve-Week Term.
December	11	Founder's Day.
December	20	Saturday—Christmas Recess begins.

General Information

Introduction

Duke University School of Medicine and Duke Hospital were established in 1930, through the munificent gift of the late James B. Duke. The School of Medicine and Hospital are located in the same building situated on the campus of Duke University. Both have been planned to insure the greatest correlation between the various departments. The students in the School of Medicine are accorded the same privileges and subject to the same laws and regulations as those of the other divisions in the University. Seventy-six students are admitted to the first year class each year and on October 1, 1956 three hundred and sixteen students were enrolled.

Aims of the School

Duke University School of Medicine, from its beginning in 1930, has maintained as its major objectives: (a) the cultivation and teaching of medicine on a strictly scientific basis; (b) the correlation of medical research with medical teaching at all levels of its teaching, and (c) the continuous search for and experimentation with new or improved methods of teaching scientific medicine. In order to attain these objectives, the School has been organized, its physical plant planned, and its administrative structure constituted so that there exists the closest possible academic and physical relationship between undergraduate and graduate work in the University and the School of Medicine, and also between the basic medical sciences and the clinical sciences within the School and its integrated teaching Hospital. The professional staff of the School is composed of two general categories, those with permanent appointment and unlimited tenure, and those with temporary appointment. The latter, the much larger group, is maintained on a highly fluid basis, which makes possible a high degree of selectivity in appointment for academic training and scientific research. The smaller group of permanent appointees has in every individual a background characterized by academic and scientific attainment. The professional, academic, and scientific environment created by the staff is thus such as to engender scientific inquiry and to encourage diligent pursuit of the medical sciences in all their relationships. The staff at all levels devotes its entire professional time to the activities of the School or Hospital.

Degrees

Doctor of Medicine. The degree of Doctor of Medicine is conferred on those who have completed, to the satisfaction of the Committee on Health Affairs, the twelve quarters of eleven weeks each of the curriculum of the School of Medicine, and have signed an agreement that they will spend at least two years of the succeeding three years in hospital or laboratory work acceptable to the Committee on Health Affairs. As a guarantee of this pledge the diploma is deposited in the Treasurer's office until after the completion of this training. At the time of graduation a temporary certificate is issued which must be returned prior to the delivery of the permanent diploma. Failure to fulfill this agreement constitutes a waiver of any claim to possession of the diploma and the degree Doctor of Medicine. At present one half of the required period of approved hospital or laboratory may be active duty in the Armed Forces or U. S. Public Health Service.

Bachelor of Science in Medicine. After the completion of six quarters in Duke University School of Medicine, Duke University, on the recommendation of the Committee on Health Affairs, grants the degree of Bachelor of Science in Medicine to medical students who have completed creditable investigative work, prepared an acceptable report of the investigation, and passed an examination upon the subject of investigation before an advisory committee. Students who elect to undertake work toward this degree must obtain written permission from the Committee on Health Affairs after approval of their program by the head of the department in which the work is to be done. No credit toward this degree is given for additional college work. All students in good standing are encouraged to undertake such investigative work as they may elect with the approval of the head of the department in which they wish to work. All requirements must be completed three months prior to the date on which the B.S. degree is granted.

Bachelor of Science in Medical Technology. A minimum of two years of approved college work is required for admission. The degree Bachelor of Science in Medical Technology is awarded upon successful completion of a twenty-one months' course. The registration fee which includes tuition, student health and diploma fee for the entire course, is \$300. Other student activity fees are optional. Further information as to specific requirements may be obtained from Dr. Haywood M. Taylor, Duke Hospital, Durham, North Carolina.

Master of Science and Doctor of Philosophy. Work leading to each of these degrees may be pursued in the preclinical departments. For further details concerning conditions under which these degrees are

awarded consult the Bulletin of the Graduate School of Arts and Sciences.

Student Government

Members of the student body elect an Honor Council, in which each class is represented. It is the duty of the Honor Council to hear all cases involving breaches of conduct on the part of members of the student body. All new students entering the School are required to comply with this system of government. The Council for 1956-57 is as follows:

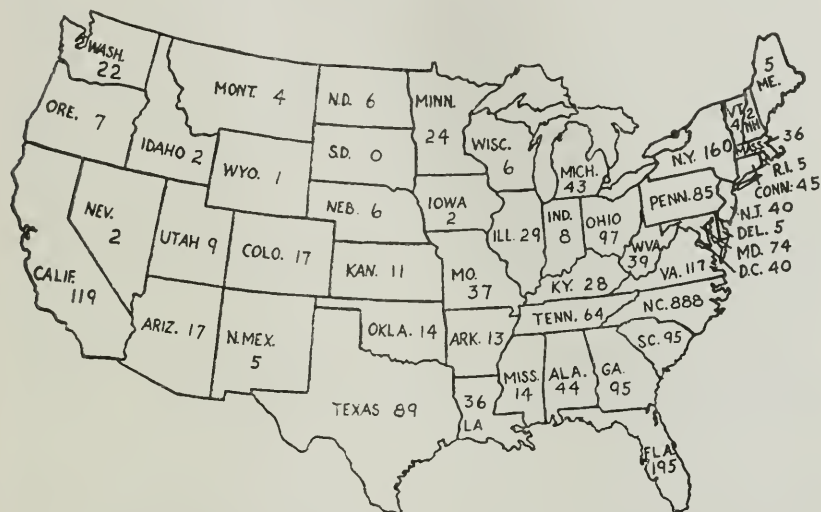
- President: James Burns Creighton, Jr.
 Secretary and Treasurer: Calvin Harrison Mitchell
 Fourth Year Class Thomas Leroy Dulin
 Representatives: Sam E. Myrick, Jr.
 Angelo Peter Spoto, Jr.
 Third Year Class John Jacob Furth
 Representatives: James Mobley Lee
 Clayton Houston McCracken, Jr.
 Second Year Class Maurice Nikola Courie
 Representatives: Richard Kurt Lindquist
 Harold Arthur Wilkinson
 First Year Class William Cornelius Cooper
 Representatives: Edwin Thornton Preston
 Carl Harold Weber, Jr.

The Duke University Medical Alumni

The Duke University Medical Alumni now number almost three thousand members. Membership includes all graduates of the medical school (total through 1956—1581), past and present faculty, all past and present house-officers of Duke Hospital (including the 1273 who were not Duke graduates); making a grand total of 2,854. Associate membership is held by the alumni of the following Paramedical Services: Hospital Administration, Dietetics, Social Service, Laboratory Technique, X-Ray Technology, Physical and Occupational Therapy, Medical Record Library, and Medical Art and Illustration. The present officers are: Ben N. Miller '35, Columbia, S. C., president; Cyrus L. Gray '37, High Point, N. C., vice-president; George Baylin '37, Duke Hospital, treasurer; and Talmage Peele '34, Duke Hospital, secretary.

A news letter is sent to all the members in January, April, July, and October of each year. Reunions are held every three years in Durham. Alumni groups are being formed in several states and they plan to hold meetings at their state medical meetings.

Alumni luncheons or dinners are held during the following meetings: The American Medical Association; The Southern Medical Association; The North Carolina Medical Society; American Academy of Pediatrics.



DISTRIBUTION OF THE ALUMNI OF THE DUKE MEDICAL
SCHOOL AND HOSPITAL

The map shows states in which Duke doctors are located and the number in each state. Figures include those who received the M.D. degree from Duke and those who have served a year or more on the house staff.

Not shown are the 91 physicians serving in territories of U. S. and foreign countries* and 42 serving with the Armed Forces overseas. A total of 2,707 physicians are distributed among all of the United States except South Dakota.

Living Accommodations

Housing facilities for men are provided in the Men's Graduate Center located near the Hospital. Rooms for women students are provided in Epworth Hall on the Woman's Campus located about 1½ miles from the Hospital. Bus service is provided between campuses. Students are not required to live in the dormitory and rooms

* Alaska, one; Afghanistan, one; Arabia, two; Brazil, one; Canada, nineteen; Canal Zone, two; Chile, three; Columbia, four; Cuba, four; England, ten; Formosa, eight; Germany, one; Greece, one; Guatemala, two; Hawaii, three; India, two; Iceland, one; Iraq, one; Japan, four; Jordan, one; Lebanon, two; Mexico, three; Norway, one; Panama, two; Paraguay, two; Peru, one; Philippine Islands, four; Puerto Rico, one; Sweden, one; Switzerland, one; Thailand, two; Venezuela, two; Virgin Islands, one.

and apartments are available in the immediate proximity to the School of Medicine.

All dormitory rooms are occupied under the rules and regulations established by the University. Rooms may be reserved by new applicants only if they have been accepted officially for admission to the School of Medicine and if they have paid a room deposit of \$25.00 to the Duke University Housing Bureau. The initial room reservation deposit is effective for the period of continuous attendance. It will be refunded within thirty days after graduation upon the request of the student. Upon the withdrawal of an accepted applicant or of an enrolled student prior to graduation the deposit is refundable provided the Housing Bureau is notified at least sixty days prior to the beginning of the term for which the room is reserved. Students already in residency may retain their rooms for the succeeding quarter by applying to the Duke University Housing Bureau for confirmation of the reservation.

Meals are available in the cafeteria of the Men's Graduate Center located one block from the School of Medicine. Within the Hospital sandwiches and drinks only are available to students.

Medical Care

ELBERT L. PERSONS, A.B., M.D., *Physician in Charge and Associate Professor of Medicine*, CAROLINE HELMICK, A.B., M.D., *Woman's Campus Physician*.

With exceptions noted below, full medical and surgical care is furnished to all regularly matriculated medical students of the University who have paid the quarterly General Fee. This service is under the direction of the Physician in Charge with the co-operation of the Staff of Duke Hospital. It includes hospitalization (limited to thirty days), medical and surgical care, drugs, dressings, x-ray studies, and ward but not special nursing. A charge for board is made at the same rate as in the University dining halls. Refraction of eyes and treatment of teeth and of all chronic and pre-existing conditions, such as diseased tonsils, hernia, elective surgery, chronic skin conditions, endocrine disturbances, etc., or accidents or illnesses occurring during vacations or while off the campus are not included in this service. The cost of any necessary braces and orthopaedic appliances, as well as of special nursing must be borne by the patient. If the student has insurance providing hospitalization, surgical, or medical benefits, the benefits shall be applied to the cost of his medical care.

Facilities

Duke Hospital. Duke Hospital, an integral part of Duke University School of Medicine, has every modern convenience for the diagnosis, proper care, welfare and comfort of the patients, both ward and private, white and colored, whether they come from Durham or

from a distance. It has 591 beds, including 30 bassinets for newborn infants, and 20 premature nursery bassinets. *Medicine*, including dermatology and neurology, has 77 ward beds; *surgery*, including urology, otolaryngology, ophthalmology, and orthopaedics, 135 ward beds; *obstetrics*, including *gynecology*, 59, and 30 bassinets; *psychiatry*, 30; and *pediatrics*, 45. There are 225 private rooms and semiprivate cubicles, 12 air-conditioned operating rooms, 4 obstetric delivery rooms, and ward and student laboratories. Offices and examining rooms for members of the Medical Faculty are located in the Hospital. A new four million dollar air-conditioned wing, nearing completion, adds 109 private beds, private and public clinic facilities, 10 operating rooms, expanded x-ray services, an ambulant patients' dining room, modern instructional space and improved general service facilities. The Hospital has been approved for internships and residencies by the Council on Medical Education and Hospitals of the American Medical Association, and is approved by the Joint Commission on the Accreditation of Hospitals.

Duke Hospital and its Out-Patient Clinic were opened for patients on July 21, 1930. Through December 31, 1956, 547,218 individuals have been examined, diagnosed and treated. The average daily census of hospital patients during the past year was 450; 204,610 visits were made to the Out-Patient Clinics during the same period. Eighty-two percent of these patients came from 98 North Carolina counties. The remaining eighteen per cent were from many states of the Union and from foreign countries.

The Private Diagnostic Clinic was organized to co-ordinate the diagnostic studies, and to give better care to the complicated problems arising in the examination of private patients. The Clinical Staff of Duke Hospital and School of Medicine forms the professional staff of this clinic. The offices and examining rooms are in Duke Hospital, and all of the laboratory and diagnostic facilities of the Hospital and School of Medicine are utilized by the Clinic.

Veterans Hospital. The Durham Veterans Administration Hospital is located within walking distance of the School of Medicine. This 485 bed general hospital was opened in April, 1953. Its full-time professional staff are all members of the faculty of Duke University School of Medicine and the house staff training at Veterans Hospital and Duke Hospital are closely integrated.

Library.

JUDITH FARRAR, A.B., B.S., *Librarian and Associate Professor of Medical Literature.*
MILDRED PERKINS FARRAR, A.B., *Assistant Librarian.*

"To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all."—SIR WILLIAM OSLER.

In addition to the General Library of Duke University and the departmental libraries of biology, chemistry, physics, etc., which

have 1,268,871 volumes available for medical students, Duke Hospital Library contains 60,900 volumes of American and foreign medical literature and subscribes to 685 current American and foreign medical and other scientific journals. These books and journals are available daily from 8:30 A.M. to 10:30 P.M. for the students, nurses, staff, and medical profession.

GENERAL INFORMATION FOR APPLICANTS

Years of college work required for entrance	3
Resident tuition and fees for first year	\$1020
Non-resident tuition and fees	\$1020
Estimated cost of equipment (books, supplies, etc.) first year	\$265
Estimated minimum cost of room and board for first year	\$600
Amount of non-refundable application fee	\$5
May give early decision to applicant preferring this school but offered a place in another school	Yes
Medical College Admission Test required	Yes

1958-59 FIRST YEAR CLASS

STATISTICS FOR 1956-57 FIRST YEAR CLASS

Size of first year class	76	Number of applicants	820
File application for admission between	Aug. 15, 1957 Dec. 1, 1957	Percentage of entering 1st yr. class who had completed four years of college	74%
Applicant will be notified of action on his application between	Nov. 1, 1957 Feb. 15, 1958	Percentage of entering 1st yr. class interviewed	99%
Amount of deposit fee required on or after January 15, 1958, to hold place in class if applicant is accepted	\$50	Percentage of entering 1st yr. class for whom results of the Medical College Admission Test were available	100%
Date entering class starts program	Sept. 15, 1958	Percentage of applicants who were women	5%
Address inquiries to: Committee on Admissions Duke University School of Medicine Box 3710, Duke Hospital Durham, North Carolina		Percentage of women in the 1st yr. class	5%
		Number of out-of-state residents in 1st yr. class	54
		Number of foreign residents included in the item above	0

Admission

"I request that great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination and application evincing a wholesome and real ambition for life."—James B. Duke.

Intelligence, character and a transparent integrity are the essential qualifications for admission.

A premedical student should be aware of the importance of a well-rounded general education as a preparation for the study of medicine and not limit himself to scientific courses. Experience has shown that the medical student with a considerable science background enjoys no advantage over his classmates with less premedical science preparation. The Admissions Committee believes that of greater importance than the specific subjects taken is the manner in which the college load is carried. The premedical student would be better advised to secure a knowledge of the principles and a thorough appreciation of the interrelations of the basic sciences than to accumulate credits in many courses. He should learn how to work independently, to observe critically and to analyze rather than to simply store the information presented. Good study habits and efficacious use of time are perhaps the most important tools a student can bring to the study of medicine. His choice of studies beyond those required for admission should be governed by his own chief interests and by the intellectual stimulus to be derived from the work. In general he should avoid courses in subjects which are included in the medical curriculum.

Application for Admission

Application forms may be obtained by writing to the Committee on Admission, Box 3710, Duke Hospital, Durham, N. C. Please do not send request before August 15th. Formal applications will be accepted by the Committee on Admissions only between 15 August and 1 December.

Due to the large number of qualified applicants to all medical schools, each student is urged to apply to at least four schools. In the event an applicant is accepted by another school before he has heard from Duke, and is forced to secure that acceptance with a deposit, he may request special consideration by our Committee.

Requirements for Admission

1. A minimum of ninety semester hours of approved college credit is necessary for admission to the school. It must include:

- (1) Two years of English of which the second year should be chiefly composition and theme writing.
- (2) Two years of chemistry, the first inorganic and the second analytic and organic.
- (3) One year of college physics.
- (4) One year of biology.
- (5) One year of mathematics.

2. Medical College Admission Test. This test is required of all applicants. It is administered by the Educational Testing Service, P. O. Box 592, Princeton, New Jersey. This test is given at many of the colleges throughout the country in May and November of each year. Arrangements for taking this test should be made by the student through his premedical advisor.

Selection

Selection is made during the period October 1 through February 15 for the students entering the following October. The data on each candidate are carefully screened by the Committee on Admissions. When further evidence is indicated a personal interview is requested. If the distance from Durham is permissible the interview is conducted here. Where the distance is prohibitive the candidates are referred to our regional representatives. Many factors are evaluated by the Committee in the selection process. In the end those students are admitted who show the most promise for exceptional future practice of medicine. The candidate is notified as soon as possible whether or not he has been accepted. If he has been accepted it is necessary to send a deposit of \$50.00 by the succeeding January 15 in order to insure enrollment. This deposit is applied toward tuition. Inasmuch as admission must be offered a considerable period in advance of matriculation the admission must be provisional upon the successful completion of the remaining college work. In addition a physical examination is necessary prior to enrollment.

Advanced Standing

Applications for transfer into the second and third year classes will be considered only if space permits. No applications for entrance to the fourth year will be considered. For entrance to the third year, Part I of the National Board Examination will be required as evidence of satisfactory accomplishment in the subjects of the first two years.

Regional Representatives of the Committee on Admission

Los Angeles, California.....	JEREMIAH W. KERNER
Pasadena, California.....	ROBERT H. PUDENZ
San Francisco, California.....	EMILE F. HOLMAN
Stanford, California.....	CHARLES H. DANFORTH
Montreal, Canada.....	LAMAR ROBERTS
Denver, Colorado.....	F. VERNON ALTVATER
New Haven, Connecticut.....	ALLEN K. POOLE
Jacksonville, Florida.....	EDWARD JELKS
Lakeland, Florida.....	CHARLES LARSEN, JR.
Tampa, Florida.....	RICHARD G. CONNAR
Atlanta, Georgia.....	E. B. DUNLAP, JR.
Chicago, Illinois.....	GEORGE H. GARDNER
Iowa City, Iowa.....	ARTHUR L. BENTON
Kansas City, Kansas.....	RALPH H. MAJOR
Wichita, Kansas.....	THOMAS JAGER
Lexington, Kentucky.....	KEARNS R. THOMPSON
Louisville, Kentucky.....	MALCOLM D. THOMPSON
New Orleans, Louisiana.....	PHILIP H. JONES, JR.
Baltimore, Maryland.....	CHARLES E. LEACH
Baltimore, Maryland.....	JOHN T. KING, JR.
Boston, Massachusetts.....	JAMES H. CURRENS
Brookline, Massachusetts.....	JAMES L. TULLIS
Port Huron, Michigan.....	WILLIAM T. DAVISON
Rochester, Minnesota.....	W. H. HOLLINSHEAD
Kansas City, Missouri.....	ROBERT H. BARNES
St. Louis, Missouri.....	DORIS SURLS WOOLSEY
New York, New York.....	LAWRENCE S. KUBIE
New York, New York.....	BERTRAM J. SANGER
New York, New York.....	RICHARD A. RUSKIN
Rochester, New York.....	WILLIAM S. McCANN
Syracuse, New York.....	PHILIP P. ARMSTRONG
Cleveland, Ohio.....	B. S. KLINE
Columbus, Ohio.....	CHARLES A. DOAN
Dayton, Ohio.....	R. L. JOHNSTON
Toledo, Ohio.....	JOHN L. STIEFL
Portland, Oregon.....	RICHARD R. CARTER
Portland, Oregon.....	KARL H. MARTZLOFF
Johnstown, Pennsylvania.....	W. FREDERICK MAYER
Palmerton, Pennsylvania.....	R. P. BATCHELOR
Pittsburgh, Pennsylvania.....	JACK D. MEYERS
Scranton, Pennsylvania.....	GEORGE A. CLARK
Providence, Rhode Island.....	MARSHALL N. FULTON
Charleston, South Carolina.....	EDWARD F. PARKER
Charleston, South Carolina.....	J. I. WARING
Columbia, South Carolina.....	BEN N. MILLER
Columbia, South Carolina.....	WILLIAM WESTON
Columbia, South Carolina.....	JAMES H. GIBBES
Greenville, South Carolina.....	RAYMOND C. RAMAGE
Chattanooga, Tennessee.....	RICHARD VAN FLETCHER
Memphis, Tennessee.....	RAPHAEL E. SEMMES
Nashville, Tennessee.....	SAM L. CLARK
Sewanee, Tennessee.....	HENRY T. KIRBY-SMITH
Dallas, Texas.....	A. JAMES GILL
Galveston, Texas.....	A. E. HANSEN
Houston, Texas.....	H. GRANT TAYLOR
San Antonio, Texas.....	P. I. NIXON

Salt Lake City, Utah.....	THOMAS RAY BROADBENT
Charlottesville, Virginia.....	HENRY B. MULHOLLAND
Seattle, Washington.....	WILLIAM A. MACCOLL
Charleston, West Virginia.....	HAROLD KUHN
Huntington, West Virginia.....	R. M. WYLIE
Madison, Wisconsin.....	O. A. MORTENSEN
Philadelphia, Pennsylvania.....	MAX W. FISCHBACH

Curriculum

Beginning 16 September 1957 the academic year will become thirty-six weeks (instead of previous thirty-three weeks). For first and second-year students the year will be divided into three terms of twelve weeks each; for third and fourth-year students there will be four terms of nine weeks each.

In the first two years the instructional program does not adhere rigidly to the above terms, but rather involves interdepartmental correlations. The third year is made up of nine-week terms of medicine, surgery, obstetrics-gynecology and psychiatry. The fourth year is comprised of nine-week terms of medicine, surgery and pediatrics and one term as an elective. Elective courses have been organized for small groups, or the time may be utilized in independent work (including research) in any department, clinical or preclinical. Arrangements for taking such courses or doing other work are made through the Curriculum Committee.

Students are encouraged to take a portion of their medical school work at other schools. Permission must be obtained in advance from the Committee on Health Affairs and the full tuition at Duke must be paid for that quarter. If the charges at the school at which the work is taken are less than those at Duke they will be paid by Duke and if more the difference must be made up by the student. At the completion of the work in another school an examination in the subject may be conducted by the department at this medical school.

Promotion

Promotion committees composed of the heads of the departments offering instruction in those years periodically review the records of students. The Committee on Health Affairs, acting on recommendations of the promotion committees promotes those qualified, warns those whose work is unsatisfactory, places on probation those whose work is very unsatisfactory and requests the resignation of those considered unpromising candidates for the degree Doctor of Medicine. A student wishing to appeal this decision may do so to the chairman of the Committee on Health Affairs within two weeks of his notification.

The Committee on Health Affairs reserves the right to require the withdrawal of any student at any time if, in the opinion of the majority of its members, he should not continue his course.

Financial Information

Fees and Expenses

Listed below is a table of the approximate expenses per nine months academic year of registration in the School of Medicine. These figures represent the average among the men, women, married and single medical students during the academic year 1955-1956.

ESTIMATED EXPENSES PER ACADEMIC YEAR

Tuition and fees	\$1020.00
Board	600.00
Room	270.00
Books	100.00
Laundry	100.00
Insurance, instruments and incidentals*.....	150.00
	<hr/>
	\$2240.00

One fourth of the total fees is due and payable at the beginning of each nine-week term. A fine of \$5.00 is charged for late registration after the first 5 days of the term. No credit will be given for any term in which the tuition has not been paid whether the work has been done here or elsewhere. Students who have been permitted by the Curriculum Committee to spend a term at another medical school or hospital may subtract the amount of tuition paid elsewhere from that due here for that quarter.

It is not advisable for a student to attempt outside work to defray his expenses during the academic year. The curriculum is so crowded that the results usually are disastrous to his health and academic standing. A few students in the upper classes successfully carry out small part-time jobs, but this must not be relied upon for income.

Angier B. Duke Memorial and Other Loan Funds

The Angier B. Duke Memorial, Incorporated, administers through an advisory committee of the officers of the University a loan fund for students. In addition, the loan funds of the Francis and Elizabeth Swett and W. K. Kellogg Foundation are available for students who are not financially able to meet their expenses. Medical students, after their third quarter, may apply for tuition loans from these sources.

* Microscope, sphygmomanometer, ophthalmoscope, otoscope, and other equipment, which are required of each student and which must conform to rigid standards, may be obtained on a rental basis from the University.

No University scholarships are awarded in the School of Medicine. The loan funds are administered in accordance with the following regulations:

1. No loan will be made to a student who violates any of the regulations of the University or who is not doing outstanding classwork.

2. Loans will be made only to students who are taking full courses of study that lead to a degree, and all loans must be arranged not later than one week after the beginning of a quarter.

3. Every applicant for a loan must present with the application such security as the President of the University may approve, and no money will be advanced before a note with approved security is in the hands of the Treasurer of the University.

Frederic M. Hanes Fellowships

Any Duke medical student after his first year is eligible for a leave of absence and a Fellowship of \$175 per month for full-time research work at Duke with special emphasis in a preclinical subject. These Fellowships will be granted on the recommendation of the Committee on Health Affairs for a period of six months, but may be renewed. Information may be obtained from Dr. Deryl Hart.

Awards to Medical Students and Interns

(Information may be obtained from the Dean's Office)

Borden Undergraduate Research Award in Medicine

An award of \$500 may be given to the Duke Senior who, in the opinion of the Committee on Health Affairs has performed the best research work during his or her entire medical course, including that done during the preclinical years, and thesis for the B.S. degree in Medicine. *Applicants should submit their papers, articles or reprints to the Dean at least three months prior to expected date of graduation.*

Trent Prize in the History of Medicine

An annual award of fifty dollars for the best original and publishable essay on any topic in the history of medicine or its allied sciences by a Duke medical student or house-officer has been established by Mrs. Mary Trent Semans in memory of the late Dr. Josiah C. Trent,

who had been Assistant Professor of Surgery in Charge of Thoracic Surgery at Duke, and who had greatly increased the interest of the staff and students in medical history. Essays should be submitted to Dr. Joseph E. Markee, the Chairman of the Trent Award Committee, by April 1 of the year in which they are to be considered.

The J. C. Trent Medical History Society, open to all Duke medical students and house officers, meets the second Tuesday of each month, either for informal discussions among its members or for a guest lecture, to which the public is welcomed. The Society also sponsors the *J. C. Trent Memorial Lecture*, established by Mrs. Mary Trent Semans.

Mosby Awards

A text or reference book from the C. V. Mosby catalog may be selected by each of the five best seniors.

Merck Award

Merck and Company donates complimentary copies of *The Merck Manual* to two outstanding seniors.

North Carolina State Loans

The State of North Carolina has established a student loan fund for the purpose of aiding worthy students who need assistance in financing their professional education and who agree to practice their profession in a North Carolina rural area or small town of less than 2500 population for a period of at least four years upon the completion of their professional training. To be eligible a student must have been a resident of North Carolina for the past eight years. The maximum loan to a medical student shall be \$1200.00 per academic year or a maximum of \$4800.00 for a four year period. The student who receives a loan must immediately following completion of the four year medical course take a rotating internship of one year and if approved by the Medical Care Commission he will have the option of continuing the internship through a second year. Detailed information can be obtained from the North Carolina Medical Care Commission, Post Office Box 1880, Raleigh, North Carolina.

Departments of Instruction



Anatomy

JOSEPH E. MARKEE, Ph.D. (Chicago, 1929), *James B. Duke Professor of Anatomy and Chairman of the Department.*

JOHN W. EVERETT, Ph.D. (Yale, 1932), *Professor of Anatomy.*

DUNCAN C. HETHERINGTON, Ph.D. M.D. (Illinois, 1922; Johns Hopkins, 1926), *Professor of Anatomy.*

R. FREDERICK BECKER, Ph.D. (Northwestern, 1940), *Associate Professor of Anatomy.*

KENNETH L. DUKE, Ph.D. (Duke, 1940), *Associate Professor of Anatomy.*

TALMADGE L. PEELE, M.D. (Duke, 1934), *Associate Professor of Anatomy and Assistant Professor of Medicine.*

GEORGE J. BAYLIN, M.D. (Duke, 1937), *Associate in Anatomy and Professor of Radiology.*

JEROME A. GRUNT, Ph.D., M.D. (Kansas, 1952; Duke, 1957), *Instructor in Anatomy.*

WILLIAM H. KNISELY, Ph.D. (South Carolina, 1954), *Instructor in Anatomy.*

SAM A. AGNELLO, A.B. (Duke, 1939), *Technical Instructor in Anatomy.*

The required courses of instruction in gross human anatomy, histology, and neurology are scheduled for five and one-half days a week for a period of sixteen weeks during the first year. Emphasis is placed upon the study of material in the laboratory. In an attempt to utilize more fully the laboratory time, visual educational methods are employed as fully as possible. These techniques consist of colored motion pictures of demonstration dissections, colored lantern slides, and motion pictures, both embryological and neurological. All of the instruction is designed to be as informal and as nearly individual as possible. General principles and the functional viewpoint of living anatomy are stressed in the hope that the student may be stimulated to secure a working knowledge of anatomy in the broadest sense. Whenever possible, fresh tissues and living cells are made available for examination, and clinical cases exemplifying anatomical principles are studied whenever they are available at appropriate times. Through the co-operation of the Department of Radiology, the students are given an opportunity to study portions of the living human body as revealed by the fluoroscope and roentgenograph. The following elective courses are offered:

Demonstrations in Anatomy. Using dissections already prepared, weekly demonstrations of selected regions or systems are made by the members of the group. Sixth quarter—Two hours per week by arrangement. Second-year students in groups of 10.

Review in Anatomy. During the sixth quarter, a review in anat-

omy will be presented by the visual education methods outlined above, covering gross and neuro-anatomy, and histology.

Special Neuro-anatomy. Laboratory work and conferences upon selected portions of the human central nervous system. Limited to 6 junior or senior students. Two hours weekly by arrangement.

Brain modeling. Free-hand reconstruction in clay, from gross and sectioned material, of the chief tracts and nuclei of the human brain stem. By arrangement—4 to 10 students.

Experimental Neurology. An operative and laboratory study of the effect of various lesions upon the central and peripheral portions of the nervous system. 4 to 8 junior and senior students by arrangement. Prerequisite—operative surgery.

Advanced Studies in Anatomy. These may be arranged at any time under the direction of the various members of the staff.

Review for Orthopaedic Anatomy. A one hour weekly review of the anatomy related to orthopaedic surgery.

Review for Surgical Anatomy. A one hour weekly review of the anatomy related to general surgery.

Biochemistry

PHILIP HANDLER, Ph.D. (Illinois, 1939), *Professor of Biochemistry and Nutrition and Chairman of the Department.*

MARY L. C. BERNHEIM, Ph.D. (Cambridge, 1928), *Associate Professor of Biochemistry.*

JEROME S. HARRIS, M.D. (Harvard, 1933), *Associate Professor of Biochemistry and Professor of Pediatrics.*

GEORGE W. SCHWERT, Ph.D. (Minnesota, 1943), *Associate Professor of Biochemistry.*

HAYWOOD M. TAYLOR, Ph.D. (North Carolina, 1924), *Associate Professor of Biochemistry and Professor of Toxicology.*

HENRY KAMIN, Ph.D. (Duke, 1948), *Assistant Professor of Biochemistry and Principal Scientist at the Durham Veterans Administration Hospital.*

WILLIAM P. DEISS, JR., M.D. (Illinois, 1945), *Assistant Professor of Biochemistry and Associate Professor of Medicine, Physician at Durham Veterans Administration Hospital.*

WILLIAM L. BYRNE, Ph.D. (Wisconsin, 1953), *Assistant Professor of Biochemistry.*

NORMAN KIRSHNER, Ph.D. (Pennsylvania State Univ., 1952), *Associate in Biochemistry.*

WILLIAM S. LYNN, M.D. (Columbia, 1946), *Associate in Biochemistry and Medicine.*

IRWIN FRIDOVICH, Ph.D. (Duke, 1955), *Instructor in Biochemistry.*

ROBERT W. WHEAT, Ph.D. (Washington U., St. Louis, 1955), *Instructor in Biochemistry.*

RONALD H. GREEN, Ph.D. (California Institute of Technology, 1954), *Instructor in Biochemistry and Biochemist, Durham Veterans Administration Hospital.*

LEO B. DANIELS, *Technical Associate in Biochemistry.*

FELLOWS

RONALD CHEN, Ph.D. (California, 1957), *U. S. Public Health Service Postdoctoral Fellow in Biochemistry.*

JACK PREISS, Ph.D. (Duke, 1957), *U. S. Public Health Service Postdoctoral Fellow in Biochemistry.*

FRANCOIS CHAPEVILLE, D.Sc. (Sorbonne, 1956), *Research Fellow in Biochemistry.*

- THEODORE ROSETT, Ph.D. (London, 1955), *Research Fellow in Biochemistry*.
MAGARET SCHWERT, Ph.D. (Minnesota, 1950), *Research Fellow in Biochemistry*.
JACK D. KLINGMAN, M.S. (Medical College of Virginia, 1953), *U. S. Public Health Service Fellow in Biochemistry*.
FRANCIS C. NEUHAUS, B.S. (Duke, 1954), *U. S. Public Health Service Fellow in Biochemistry*.
DANIEL S. BERNSTEIN, M. D. (Johns Hopkins, 1953), *U. S. Public Health Service Postdoctoral Fellow in Biochemistry*.
ALEXANDER H. WOODS, M.D. (Johns Hopkins, 1952), *U. S. Public Health Service Postdoctoral Fellow in Biochemistry*.

ASSISTANTS

- BERNARD BULOS, B.S. (College of the City of New York, 1956), *Research Assistant in Biochemistry*.
GEORGE D. DUDA, B.S. (College of the City of New York, 1951), *Research Assistant in Biochemistry*.
WALTER R. FARKAS, B.S. (College of the City of New York, 1955), *Research Assistant in Biochemistry*.
LOUIS HASS, M.S. (Bucknell, 1954), *Research Assistant in Biochemistry*.
ROBERT M. MACLEOD, M.S. (New York University, 1956) *Research Assistant in Biochemistry*.
DAVID B. MILLAR, B.S. (College of the City of New York, 1954), *Research Assistant in Biochemistry*.
WILLIAM B. NOVOA, B.S. (Florida, 1955), *Research Assistant in Biochemistry*.
CARL ROTHSCHILD, B.S. (College of the City of New York, 1952), *Research Assistant in Biochemistry*.
CHARLES H. WILLIAMS, JR., B.S. (Maryland, 1956), *Research Assistant in Biochemistry*.
ALFRED D. WINER, M.S. (Purdue, 1948), *Research Assistant in Biochemistry*.

The required course in biochemistry for first-year students is given over a period of sixteen weeks in the spring semester. The first phase is devoted to a survey of the chemistry of the materials fundamental to all life, proteins, fats and carbohydrates and the nature of enzymatic action. This is followed by consideration of those events in intermediary metabolism common to the life of all mammalian cells. Thereafter, the course in biochemistry is integrated with that in physiology. The special metabolism of muscle, nerve, the eye, the kidney, bone, connective tissue and the chemical aspects of digestion, respiration, electrolyte, acid-base and fluid balance are presented at such times with relation to the study of the physiology of these organs and processes as to facilitate integration and correlation of the two disciplines. The final phase of the program is a consideration of human nutrition. Throughout the course, the student performs laboratory experiments designed to illustrate and amplify concepts considered in lectures and conferences.

Since the success of the students in this course is largely determined by the adequacy and ready availability of their premedical training, it is urged that all students review the fundamental laws, theories, and facts of chemistry before the beginning of the course. A circular

outlining the topics requiring special attention is sent to all students upon admission. Additional copies of the circular may be obtained from the Dean's Office.

Biochemical Research. The facilities of the department, including various types of research equipment and the clinical material of the blood chemistry laboratory, are available to properly qualified students for independent or supervised investigations. Chemical investigations of problems in biochemistry or in conjunction with the clinical and pathological departments may be carried on.

Chemistry of Proteins and Enzymes. A two-hour seminar is given weekly throughout the Autumn, Winter and Spring Quarters in alternate years.

Intermediary Metabolism. A two-hour lecture course and seminar conducted during Autumn, Winter and Spring Quarters. Given annually.

Advanced Seminar in Nutrition. A three-hour lecture and seminar course in modern nutritional concepts. Given alternately with *Intermediary Metabolism* during Autumn Quarter.

Biochemistry of Disease. A seminar course meeting once weekly to discuss etiology and pathogenesis of metabolic diseases from the biochemical viewpoint. Given in alternate years in the Spring Quarter.

Medicine

EUGENE ANSON STEAD, JR., M.D. (Emory, 1932), *Florence McAlister Professor of Medicine and Chairman of the Department.*

J. LAMAR CALLAWAY, M.D. (Duke, 1932), *Professor of Dermatology and Syphilology.*

OSCAR C. E. HANSEN-PRÜSS, M.D. (Johns Hopkins, 1924), *Professor of Medicine.*

WALTER KEMPNER, M.D. (Heidelberg, 1927), *Professor of Medicine.*

E. CHARLES KUNKLE, M.D. (Cornell, 1939), *Professor of Neurology.*

WILLIAM M. NICHOLSON, M.D. (Johns Hopkins, 1931), *Professor of Medicine, in charge of Postgraduate Education and Diseases of Metabolism.*

EDWARD S. ORGAIN, M.D. (Virginia, 1930), *Professor of Medicine.*

JULIAN M. RUFFIN, M.D. (Virginia, 1926), *Professor of Medicine.*

JAMES V. WARREN, M.D. (Harvard, 1939), *Professor of Medicine.*

WILLIAM P. DEISS, M.D. (Illinois, 1945), *Associate Professor of Medicine, and Assistant Professor of Biochemistry and Chief, Medical Service, Durham VA Hospital.*

AMOS I. CHERNOFF, M.D. (Yale, 1947), *Associate Professor of Medicine.*

FRANK L. ENGEL, M.D. (Johns Hopkins, 1938), *Associate Professor of Medicine and Assistant Professor of Physiology.*

JAMES P. HENDRIX, M.D. (Pennsylvania, 1930), *Associate Professor of Medicine and Therapeutics.*

ALBERT HEYMAN, M.D. (Maryland, 1940), *Associate Professor of Medicine.*

JOHN B. HICKAM, M.D. (Harvard, 1940), *Associate Professor of Medicine.*

GRACE P. KERBY, M.D. (Duke, 1946), *Associate Professor of Medicine.*

ELIJAH E. MENEFFEE, JR., M.D. (Duke, 1936), *Associate Professor of Medicine.*

SIDNEY OLANSKY, M.D. (Glasgow, Scotland, 1940), *Associate Professor of Dermatology and Syphilology.*

- ELBERT L. PERSONS, M.D. (Harvard, 1927), *Associate Professor of Medicine, Director of Student Health, and Associate Professor of Preventive Medicine and Public Health.*
- R. WAYNE RUNDLES, M.D. (Duke, 1940), *Associate Professor of Medicine.*
- DAVID T. SMITH, M.D. (Johns Hopkins, 1922), *Associate Professor of Medicine, and Professor of Bacteriology and Chairman of the Department.*
- JAMES B. WYNGAARDEN, M.D. (Michigan, 1948), *Associate Professor of Medicine.*
- HAROLD T. DODGE, M.D. (Harvard, 1948), *Assistant Professor of Medicine.*
- TALMAGE L. PEELE, M.D. (Duke, 1934), *Assistant Professor of Medicine and Associate Professor of Anatomy.*
- ERNST PESCHEL, M.D. (Berlin, 1930), *Assistant Professor of Medicine.*
- JOHN B. PFEIFFER, M.D. (Cornell, 1942), *Assistant Professor of Medicine.*
- ALBERT E. PUGH, M.D. (Kansas, 1941), *Assistant Professor of Medicine.*
- HERBERT O. SIEKER, M.D. (Washington Univ., 1948), *Assistant Professor of Medicine.*
- EVELYN COONRAD, M.D. (Duke, 1948), *Associate in Medicine.*
- MACDONALD DICK, M.D. (Johns Hopkins, 1928), *Associate in Medicine, and Assistant Professor of Physiology and Pharmacology.*
- E. HARVEY ESTES, M.D. (Emory, 1947), *Associate in Medicine.*
- WILLIAM S. LYNN, M.D. (Columbia, 1946), *Associate in Medicine.*
- HENRY D. MCINTOSH, M.D. (Pennsylvania, 1950), *Associate in Medicine.*
- HARRY T. MCPHERSON, M.D. (Duke, 1948), *Associate in Medicine.*
- BARBARA NEWBORG, M.D. (Johns Hopkins, 1949), *Associate in Medicine.*
- CHARLES W. TYRON, M.D. (Duke, 1938), *Associate in Medicine.*
- MALCOLM P. TYOR, M.D. (Duke, 1946), *Associate in Medicine.*
- GEORGE E. KOURY, M.D. (Tulane, 1944), *Assistant in Medicine.*
- RUTH L. PESCHEL, M.D. (Berlin, 1931), *Research Assistant in Medicine.*
- CLOTILDE SCHLAYER, Ph.D. (Heidelberg, 1927), *Research Assistant in Medicine.*
- JOHN W. ALLGOOD, M.D. (Emory, 1938), *Instructor in Medicine.*
- THOMAS AMATRUDA, M.D. (Yale, 1951), *Instructor in Medicine.*
- SHERWOOD W. BAREFOOT, M.D. (Duke, 1938), *Instructor in Dermatology and Syphilology.*
- WOODROW BATTEN, M.D. (Bowman Gray, 1944), *Instructor in Medicine.*
- PAUL C. CAMPBELL, M.D. (Buffalo, 1936), *Instructor in Dermatology and Syphilology.*
- WILLIAM C. CHEARS, M.D. (Duke, 1952), *Instructor in Medicine.*
- ALBERT D. COOPER, M.D. (George Washington, 1932), *Instructor in Medicine.*
- GEORGE W. CRANE, M.D. (Northwestern, 1946), *Instructor in Dermatology and Syphilology.*
- ROBERT CRESS, M.D. (Vanderbilt, 1953), *Instructor in Medicine.*
- ROBERT G. CUSHMAN, M.D. (Bowman Gray, 1946), *Instructor in Medicine.*
- GEORGE DONNELLY, M.D. (Sydney, Australia, 1951), *Instructor in Medicine.*
- SAMUEL L. ELMON, M.D. (Med. Coll. of Va., 1935), *Instructor in Medicine.*
- EUGENE M. EVANS, M.D. (Duke, 1953), *Instructor and Resident in Dermatology and Syphilology.*
- WALTER C. FITZGERALD, M.D. (Virginia, 1943), *Instructor in Dermatology and Syphilology.*
- S. FRANK HORNE, M.D. (Duke, 1942), *Instructor in Dermatology and Syphilology.*
- JACQUELINE HYMAN, M.D. (Leyden, Netherlands, 1949), *Instructor in Medicine.*
- H. LEROY IZLAR, M.D. (Duke, 1946), *Instructor in Medicine.*
- ANDREW JAMISON, M.D. (South Carolina, 1937), *Instructor in Medicine.*
- DAVID JOHNSTON, M.D. (Duke, 1951), *Instructor in Medicine.*
- IVAN S. KEEVER, M.D. (Western Reserve, 1952), *Instructor in Medicine.*

- WILLIAM KNISELY, Ph.D. (South Carolina, 1954), *Instructor in Medicine*.
 JAMES J. LEONARD, M.D. (Georgetown, 1950), *Instructor in Medicine*.
 THOMAS D. LONG, M.D. (Bowman Gray, 1952), *Instructor in Medicine*.
 EMMETT S. LUPTON, M.D. (N. Y. U., 1938), *Instructor in Dermatology and Syphilology*.
 JOSEPH MCCracken, M.D. (Duke, 1937), *Instructor in Medicine*.
 GEORGE E. MAHA, M.D. (St. Louis, 1953) *Instructor in Medicine*.
 A. DONALD MERRITT, M.D. (George Washington, 1952), *Instructor and Resident in Medicine*.
 CLAIRE MORRISON, M.D. (Queens, Belfast, Ireland, 1956), *Instructor in Medicine*.
 COLIN A. MUNROE, M.D. (Duke, 1939), *Instructor in Medicine*.
 H. VICTOR MURDAUGH, M.D. (Duke, 1950), *Instructor in Medicine, and Resident, Medical Service, Durham V.A. Hospital*.
 LESZEK OCHOTA, M.D. (Zurich, Switzerland, 1948), *Instructor in Medicine*.
 JACK ROBBINS, M.D. (Duke, 1948), *Instructor in Dermatology and Syphilology*.
 WILLIAM V. SINGLETARY, M.D. (Duke, 1943), *Instructor in Medicine*.
 THOMAS SUITER, M.D. (Duke, 1946), *Instructor in Medicine*.
 JOHN M. WALLACE, M.D. (Washington Univ., 1950), *Instructor in Medicine*.
 KENNETH D. WEEKS, M.D. (Duke, 1939), *Instructor in Medicine*.
 ARNOLD WEISSLER, M.D. (N. Y. State Univ., 1953), *Instructor in Medicine*.
 PRESTON W. SMITH, *Technical Associate in Clinical Microscopy*.

FELLOWS

- JAMES M. BACOS, M.D. (Duke, 1953)
 RICHARD BIRCHFIELD, M.D. (Washington, 1953).
 NOBLE J. DAVID, M.D. (Duke, 1952)
 HUGO GARCIA (URTURBIA), M.D. (Chile, Santiago, 1949)
 WILLIAM L. GLEASON, M.D. (Duke, 1952)
 ROBERT K. MYLES, M.D. (Stanford, 1955)
 ALFREDO SARAVIA, M.D. (San Carlos, Guatemala, 1952)
 WILLIAM SHAPIRO, M.D. (Duke, 1954)
 W. KYLE SMITH, M.D. (Virginia, 1953)

ASSISTANT RESIDENTS

- JOHN A. BARRETT, M.D. (Duke, 1953)
 NORMAN H. BELL, M.D. (Duke, 1955)
 GERALD BRYANT, M.D. (Duke, 1953)
 BARTON CARL, M.D. (Oklahoma, 1955)
 JOSEPH J. COMBS, JR., M.D. (Duke, 1955)
 LAMAR CREVASSE, M.D. (Duke, 1954)
 ARTHUR K. DAVID, M.D. (Duke, 1955)
 RAYMOND T. DOYLE, M.D. (Johns Hopkins, 1954)
 LAURIE L. DOZIER, JR., M.D. (Duke, 1955)
 JOHN T. EAGAN, M.D. (Johns Hopkins, 1953)
 WILLIAM H. FINNEY, M.D. (Johns Hopkins, 1953)
 WALTER L. FLOYD, M.D. (Johns Hopkins, 1954)
 SAMUEL J. FRIEDBERG, M.D. (Pennsylvania, 1952)
 JOHN R. GILL, M.D. (Virginia, 1954)
 KENNETH R. GOUGH, M.D. (Bristol, England, 1954)
 HERBERT I. HOROWITZ, M.D. (State Univ. of New York, 1953)
 HERBERT KAPLAN, M.D. (Albany, 1955)

JOHN D. LORD, M.D. (Yale, 1953)
 WALTER LUSK, M.D. (Emory, 1950)
 ROBERT G. PEELER, M.D. (Johns Hopkins, 1955)
 MICHAEL O. REINOEHL, M.D. (Pennsylvania, 1955)
 JOSEPH C. ROSS, M.D. (Vanderbilt, 1954)
 JAY P. SANFORD, M.D. (Michigan, 1952)
 ALLEN D. SMITH, M.D. (Georgia, 1937)
 SAMUEL P. TILLMAN, M.D. (Johns Hopkins, 1955)
 JOHN V. VERNER, M.D. (Duke, 1954)
 JAMES R. WARBASE, M.D. (Harvard, 1954)
 JAMES O. WYNN, M.D. (Cornell, 1951)

INTERNS

TOMMY A. BRUCE, M.D. (Arkansas, 1955)
 MARION C. CRENSHAW, JR., M.D. (Duke, 1956)
 DAVID A. DRACHMAN, JR., M.D. (New York-Bellevue, 1956)
 MARSHALL FRANKLIN, M.D. (Maryland, 1956)
 LEONARD GARREN, M.D. (Harvard, 1956)
 JOSEPH GRAYZEL, M.D. (Cornell, 1956)
 JOSEPH C. GREENFIELD, JR., M.D. (Emory, 1956)
 WILLIAM C. KAPPES, JR., M.D. (Med. Coll. Va., 1956)
 ALEXANDER L. KISCH, M.D. (Harvard, 1956)
 LEWIS B. LEFKOWITZ, JR., M.D. (Southwestern, 1956)
 LEO LUTWAK, M.D. (Yale, 1956)
 GEORGE B. MAGRUDER, M.D. (Emory, 1956)
 W. EDWARD MCGOUGH, M.D. (Duke, 1956)
 MICHAEL C. McNALLEY, M.D. (Kansas, 1956)
 DAVID E. MILLER, M.D. (Duke, 1956)
 ROBERT A. NEBESAR, M.D. (Virginia, 1956)
 EDWARD E. OWEN, M.D. (Washington, 1956)
 WILBUR C. PICKETT, JR., M.D. (Maryland, 1956)
 ABDUL N. RAHMAN, M.D. (Johns Hopkins, 1956)
 DAVID SCHOTTENFELD, M.D. (Cornell, M.D.)
 JOSEPH W. SHANDS, JR., M.D. (Duke, 1956)
 CLYDE N. SHEALY, M.D. (Duke, 1956)
 HAROLD R. SILBERMAN, M.D. (Washington Univ., 1956)
 ENG M. TAN, M.D. (Johns Hopkins, 1956)
 ROBERT E. WHALEN, M.D. (Cornell, 1956)

Introduction to Clinical Medicine and Physical Diagnosis. This course is initiated, in the fifth quarter, by introductory lectures, case discussions, and instruction in the methods of physical examination and history taking. Early in the course students begin work at the bedside in the examination of selected patients. Emphasis throughout is placed on instruction individually or in small groups. The interpretation and pathogenesis of all abnormal findings are stressed. The division of Neurology and Department of Psychiatry provide training in neurological and mental examinations. This plan of teaching continues in the sixth quarter, when, in addition, instruction in the

more specialized methods of examination is provided through the co-operation of the Departments of Surgery, Obstetrics, Gynecology, and Radiology.

Clinical Microscopy is given in the fifth quarter. The course includes the essentials of hematology and the examination of fresh material, such as urine, stools, spinal fluids, sputum, transudates, and exudates. The most important parasites of man are studied by the use of fresh and museum material. Second-year and senior students are given opportunities for special work and for investigation. This course is supplemented in the Junior and Senior years by Hematology Conferences, which are held weekly, and Ward Rounds, which are held three times weekly.

Cutaneous Medicine and Syphilology. Instruction consisting of lectures, seminars, the study and treatment of patients in the out-patient clinics, and on the wards is offered as an elective course.

Junior and Senior Medicine. The medical students are assigned to the medical wards as clinical clerks for three-quarters of their time and, for the other part of their time, to the medical outpatient department where they examine patients.

Microbiology

DAVID T. SMITH, M.D. (Johns Hopkins, 1922), *James B. Duke Professor of Bacteriology, Chairman of the Department and Associate Professor of Medicine.*

NORMAN F. CONANT, Ph.D. (Harvard, 1933), *Professor of Mycology and Associate Professor of Bacteriology.*

JOSEPH W. BEARD, M.D. (Vanderbilt, 1929), *Associate Professor of Virology and Professor of Surgery.*

JOHN R. OVERMAN, M.D. (Duke, 1950), *Associate Professor of Bacteriology.*

HILDA POPE WILLETT, Ph.D. (Duke, 1949), *Associate Professor of Bacteriology.*

LEO PINE, Ph.D. (U. California, 1952), *Assistant Professor of Bacteriology.*

MARY A. POSTON, A.M. (Duke, 1939), *Associate in Bacteriology.*

H. W. CRAIG, *Technical Associate in Serology.*

Bacteriology, Immunology, and Mycology. The required course is given in the fourth quarter. An intensive study is made of the common bacteria, fungi, and viruses which cause disease in man. The scope of the laboratory course is reasonably wide and acquaints the student with all the methods and procedures employed in bacteriological laboratories. Most of the lecture time is devoted to the immunological and epidemiological aspects of infection. The instruction is designed to give the students a clear conception of: (1) how organisms gain entrance to the body, (2) the type of poisons which they produce, (3) the nature of immune bodies which are produced by the host, and (4) the methods of preventing the disease by active and passive immunization.

Research Bacteriology. Opportunities for original investigations are afforded a few specially qualified students.

Clinical Bacteriology. During their clinical clerkships on medicine (one quarter each for junior and senior classes), the students may perform the routine and special bacteriological work for the patients assigned to them on the teaching service, under the direction of the Department of Bacteriology and in parallel with the Biological Division of the medical clinic.

Obstetrics and Gynecology

FRANCIS BAYARD CARTER, M.D. (Johns Hopkins, 1925), *Professor of Obstetrics and Gynecology and Chairman of the Department.*

EDWIN CROWELL HAMBLIN, M.D. (Virginia, 1928), *Professor of Endocrinology and Associate Professor of Obstetrics and Gynecology.*

WALTER LEE THOMAS, M.D. (Virginia, 1931), *Professor of Obstetrics and Gynecology.*

ROBERT NOWELL CREADICK, M.D. (Yale, 1937), *Associate Professor of Obstetrics and Gynecology.*

ROY TURNAGE PARKER, M.D. (Medical College of Virginia, 1944), *Associate Professor of Obstetrics and Gynecology.*

VIOLET HORNER TURNER, M.D. (Univ. of Chicago, 1940), *Assistant Professor of Obstetrics and Gynecology.*

CHARLES HENRY PEETE, JR., M.D. (Harvard, 1947), *Assistant Professor of Obstetrics and Gynecology.*

WALTER BORIS CHERNY, M.D. (McGill, 1950), *Associate in Obstetrics and Gynecology.*

CHRISTA VON ROEBEL, M.D. (Leipzig, 1937), *Associate in Obstetrics and Gynecology.*

LEONARD PALUMBO, M.D. (Duke, 1944) *Visiting Lecturer in Obstetrics and Gynecology.*

ROBERT ALEXANDER ROSS, M.D. (Pennsylvania, 1922), *Visiting Lecturer in Obstetrics and Gynecology.*

TROGLER FRANCIS ADKINS, M.D. (Duke, 1936), *Instructor in Obstetrics and Gynecology.*

WILLIAM ALEXANDER GRAHAM, M.D. (Pennsylvania, 1932), *Instructor in Obstetrics and Gynecology.*

ELEANOR BEAMER EASLEY, M.D. (Duke, 1934), *Associate in Obstetrics and Gynecology.*

RICHARD LEHMER PEARSE, M.D., (Harvard, 1931), *Instructor in Obstetrics and Gynecology.*

KENNETH ARTHUR PODGER, M.D. (Duke, 1941), *Instructor in Obstetrics and Gynecology.*

W. KENNETH CUYLER, Ph.D. (Duke, 1941), *Research Instructor in Obstetrics and Gynecology.*

CLAUDIUS PARKS JONES, M.T. (Duke, 1935), *Research Instructor in Obstetrics and Gynecology.*

RESIDENTS

PAUL GREEN, JR., M.D. (Duke, 1951)

JOHN B. MCCALL, JR., M.D. (Duke, 1953)

ASSISTANT RESIDENTS

JEAN BABINGTON WILLIAMS, JR., M.D. (Duke, 1953)

WILLIAM GILBERT BUTLER, JR., M.D. (Duke, 1953)

CHARLES HARLAN HILLMAN, M.D. (Duke, 1953)

YANCEY GOELET CULTON, JR., M.D. (Duke, 1955)

CHARLES SHIREY FLYNN, M.D. (Duke, 1945)

EDWARD BLOXTON MABRY, M.D. (Duke, 1953)

INTERNS

JAMES FRANK O'NEILL, M.D. (Duke, 1956)

HAROLD DAVIS CRANFORD, M.D. (Duke, 1956)

HARRY WALLACE JOHNSON, M.D. (Duke, 1955)

LIAM HAIM, M.D. (Duke, 1955)

MAHLON VAN RENSSELAER FREEMAN, M.D. (Yale, 1955)

Second year students receive 8 hours of instruction in the fundamentals of Obstetrics, Gynecology and Endocrinology during their course in physical diagnosis in the sixth quarter.

During one quarter of the junior year each student group attends Ward Rounds at 8:30 A.M. on Mondays, Wednesdays, and Saturdays; Preoperative and Predelivery Conferences on Tuesdays and Fridays; tutorials on Mondays, Tuesdays and Wednesdays; Pathology Conference on Thursdays and Staff Meetings on Fridays with members of the staff and the staff of other departments. They also attend an Endocrine Clinic once a week; an abnormal Obstetric Clinic once a week; regular Out Patient Clinic five times weekly for nine weeks.

The students for nine weeks during the Junior year are also assigned patients on the Obstetric and Gynecologic Wards.

Pathology

WILEY D. FORBUS, M.D. (Johns Hopkins, 1923), *Professor of Pathology and Chairman of the Department.*

GEORGE MARGOLIS, M.D. (Duke, 1940), *Professor of Pathology and Chief, Division of Neuropathology.*

ROGER D. BAKER, M.D. (Harvard, 1928), *Professor of Pathology and Chief, Laboratory Service, V.A. Hospital.*

E. STANFIELD ROGERS, M.D. (Duke, 1944), *Associate Professor of Pathology and Chief, Division of Experimental Pathology.*

BERNARD FETTER, M.D. (Duke, 1944), *Assistant Professor of Pathology and Chief of the Division of Surgical Pathology.*

ALBERT G. SMITH, M.D. (Washington U., 1947), *Assistant Professor of Pathology and Associate Pathologist, V.A. Hospital.*

ASHTON B. MORRISON, M.D., M.B., Ph.D. (Duke, 1946; Queen's Univ. of Belfast, 1946, 1950), *Associate in Pathology.*

CHANG SPO CHUNG, M.D. (Keijio Medical School), *Visiting Professor of Pathology from Taegu Medical College; Kyung-Pook University; Taegu, Korea.*

NOBORU FUKUNAGA, M.D. (Tokyo Jilei-Kai, 1944), *Guest Assistant Professor of Pathology from Kagoshima Prefectural University, Kagoshima, Japan.*

JANE G. ELCHLEPP, Ph.D., M.D. (University of Iowa, 1948; University of Chicago, 1953), *Assistant Surgeon, U. S. Public Health Service and Research Associate in Pathology.*

EUGENE EVANS, M.D. (Duke, 1953), *Guest Assistant in Pathology from the Department of Dermatology.*

JAMES WILSON, M.D. (Medical College of South Carolina, 1954), *Guest Assistant in Pathology from the Department of Surgery.*

JACOB FABRIKANT, M.D. (McGill, 1956), *Guest Assistant in Pathology from the Department of Surgery.*

CARL M. BISHOP, *Technical Associate in Pathology.*

HERTHA CRESS, M.S. (Vanderbilt, 1951), *Technical Associate in Pathology.*

J. PHILLIP PICKETT, *Technical Instructor in Pathology.*

ROBERT T. IVEY, *Technical Instructor in Pathology.*

ASSISTANT RESIDENTS

JAMES S. HENDERSON, M.B. (St. Andrews, 1951), *Senior Assistant Resident Pathologist and Instructor in Pathology.*

ROBERT E. PERRY, M.D. (University of Georgia, 1944), *Assistant Resident Pathologist and Instructor in Pathology.*

JULES GORDON, M.D. (Washington U., 1955), *Assistant Resident Pathologist and Instructor in Pathology.*

ALPHONSE VAN SCHOOTE, M.D. (State University in Ghent, 1952), *Junior Assistant Resident Pathologist and Assistant in Pathology.*

INTERNS

PATRICIA DE YOUNG, M.D. (University of Michigan, 1956), *Intern and Assistant in Pathology.*

CHARLES W. MARKHAM, M.D. (Washington U., 1955), *Captain, U. S. Air Force; Intern and Assistant in Pathology.*

General Pathology. The course in general pathology is given during the fifth and sixth quarters of the curriculum, following completion of the prerequisite courses in anatomy, physiology, biochemistry and bacteriology. All the work of the class is done with small groups, each under the guidance of a senior instructor and his junior assistant. The histological aspects of the pathological processes are studied coincidentally with the gross anatomical and physiological alterations of the tissues, thus maintaining a unity of conception of disease. As the various pathological processes and the diseases arising from their elaboration are studied by the student groups, assignments involving reports on the study of groups of cases are made by individual students. The group work and the individual student reports are supplemented by weekly conferences involving the class as a whole and dealing with problems presented by current autopsies and with other problems of general importance. Student collaboration in post-mortem studies is required. Cases thus studied are presented by the student before the class under the direction of the staff; this takes the form of a clinical-pathological conference in which each student plays a particular role.

Elective Courses. Special courses in pathology are given to students who have completed the course in general pathology. These courses are available through special arrangement.

Clinical-Pathological Conference. A weekly clinical-pathological conference for advanced study is held on Saturdays. It is open to all persons interested, but is designed especially for the Hospital and Medical School Staff. Attendance by all the students is expedient but is optional. Miscellaneous weekly pathological conferences dealing

with current cases under treatment on the various services are held for instruction of the staffs concerned.

Student Research. Research facilities are provided for competent students. Those who show an interest in investigative work are given every encouragement and are allowed to work independently or in collaboration with the staff.

Postgraduate Instruction. The staff of the department is composed of senior nonresident and junior resident members. The resident staff consists of interns, assistant residents, and a resident; all of these are active teachers as well as advanced students of disease. Ample opportunity for the development of a career in the field of pathology is provided for these men.

Medicolegal Instruction. The department works in close cooperation with the local coroner's office. Special medicolegal investigation for others are undertaken from time to time. The department collaborates with other departments of the Schools of Medicine and Law in a course in legal medicine that is given in alternate years.

Pediatrics

JEROME SYLVAN HARRIS, M.D. (Harvard, 1933), *Professor of Pediatrics, Chairman of the Department, and Associate Professor of Biochemistry.*

WILBURT CORNELL DAVISON, M.D. (Johns Hopkins, 1917), *James B. Duke Professor of Pediatrics and Dean of the School of Medicine.*

JAY MORRIS ARENA, M.D. (Duke, 1932), *Associate Professor of Pediatrics.*

SUSAN COONS DEES, M.D. (Johns Hopkins, 1934), *Associate Professor of Pediatrics.*

ANGUS MCBRYDE, M.D. (Pennsylvania, 1927), *Associate Professor of Pediatrics.*

WILLIAM J. A. DEMARIA, M.D. (Duke, 1948), *Assistant Professor of Pediatrics.*

DORIS AHLEE HOWELL, M.D. (McGill, 1949), *Assistant Professor of Pediatrics.*

ALTALA THAYER SCUDDER DAVISON, M.D. (Johns Hopkins, 1920), *Associate in Pediatrics.*

ARTHUR HILL LONDON, M.D. (Pennsylvania, 1927), *Associate in Pediatrics.*

MILDRED M. SHERWOOD, R.N. (Diploma Mount Sinai Hospital, 1923), *Associate in Pediatrics.*

GEORGE F. BOND, M.D. (McGill, 1945), *Instructor in General Practice.*

J. STREET BREWER, M.D. (Jefferson, 1919), *Instructor in General Practice.*

G. GRADY DIXON, M.D. (Medical College of Virginia, 1915), *Instructor in General Practice.*

AMOS N. JOHNSON, M.D. (Pennsylvania, 1933), *Instructor in General Practice.*

FREDERIC T. EASTWOOD, M.D. (Temple, 1944), *Instructor in Pediatrics.*

WILLIAM W. FARLEY, M.D. (Medical College of Virginia, 1943), *Instructor in Pediatrics.*

DAVID A. LOCKHART, M.D. (Duke, 1951), *Instructor in Pediatrics.*

GEORGE W. KERNODLE, M.D. (Duke, 1944), *Instructor in Pediatrics.*

JOHN T. KING, M.D. (Medical College of Virginia, 1945), *Instructor in Pediatrics.*

PAUL F. MANESS, M.D. (Duke, 1940), *Instructor in Pediatrics.*

ROBERT J. MURPHY, JR., M.D. (Vanderbilt, 1940), *Instructor in Pediatrics.*

BENJAMIN S. SKINNER, M.D. (Washington, 1940), *Instructor in Pediatrics.*

- GEORGE A. WATSON, JR., M.D. (Duke, 1939). *Instructor in Pediatrics.*
 BAILEY WEBB, M.D. (Duke, 1946). *Instructor in Pediatrics.*
 E. JANE HERRING WOOTEN, M.D. (Duke, 1943). *Instructor in Pediatrics.*
 CHARLES P. BUGG, M.D. (Johns Hopkins, 1953). *Instructor in Pediatrics.*
 DOROTHY A. HAHN, M.D. (Bowman Gray, 1953). *Instructor in Pediatrics.*
 E. CROFT LONG, M.D. (University of London, 1952). *Assistant Professor of Physiology and Associate in Pediatrics.*
 MARION OLANSKY, M.D. (George Washington, 1944). *Instructor in Pediatrics.*

FELLOWS

- MADISON SPACH, M.D. (Duke, 1954)

RESIDENTS

- J. DAVID JONES, M.D. (Duke, 1954)

ASSISTANT RESIDENTS

- WILLIAM BENJAMIN ARDREY, M.D. (Duke, 1952)
 FRED WESTON GLOVER, M.D. (North Carolina, 1955)
 CHARLES BODINE NEAL, III, M.D. (Duke, 1955)
 A. W. RENUART, M.D. (Duke, 1956).
 VIRGINIA SANFORD, M.D. (Duke, 1956).

INTERNS

- CHARLES L. DORSEY, M.D. (Duke, 1956)
 NORBERT B. ENZER, M.D. (McGill, 1956)
 CLAUDE B. GOSWICK, M.D. (Duke, 1955)
 JEROME A. GRUNT, M.D. (Duke, 1956)
 J. S. HALL, M.D. (Duke, 1957)
 A. F. HORNE, M.D. (Duke, 1956)
 SHIRLEY KIRKMAN, M.D. (Duke, 1957)
 H. W. MCKAY, M.D. (Johns Hopkins, 1955)
 VERNON P. MANGUM, M.D. (Duke, 1956)
 JOHN A. MAY, M.D. (Bowman Gray, 1955)
 ARNOLD B. NUROCK, M.D. (University of Chicago, 1956)
 EDNA A. PRESTON, M.D. (Duke, 1956)

INTERNS—OBSTETRICS AND PEDIATRICS

- CARROLL C. SHOEMAKER, M.D. (Duke, 1955)
 HARRY A. WHITAKER, JR., M.D. (Duke, 1956)

Junior and senior students, during their medical quarters, have pediatric ward rounds one hour each week. These junior students receive instruction in introductory pediatrics and the physical diagnosis of infants and children. The senior students are divided into three groups, each of which spends one quarter in pediatrics. During this quarter they are assigned in rotation as clinical clerks on the children's ward, in the nursery, pediatric out-patient department and the specialty clinics—well baby, nephritis, cardiac, allergy, hematology, convulsive disorders and chronic pulmonary disease. In addition to ward rounds, a weekly staff conference and daily out-patient teaching clinics, special conferences are devoted to normal growth and development, pediatric roentgenology, practical aspects of pediatric nursing

procedures and the preparation of diets for infants and children. Under the supervision of the Social Service Department, students visit homes to investigate the social, environmental and family aspects of disease in certain of their patients. Elective courses: Senior students may spend two weeks in general practice with Instructors in General Practice. In addition to the ten pediatric internships, there are four in which six months each are spent in obstetrics and pediatrics for graduates who plan to enter general practice. Six assistant residencies and two residencies are available.

Physiology and Pharmacology

FRANK GREGORY HALL, Ph.D. (Wisconsin, 1923), *Professor of Physiology and Chairman of the Department.*

GEORGE S. EADIE, M.B., Ph.D. (Toronto, 1921; Cambridge, 1927), *Professor of Physiology and Pharmacology.*

FREDERICK BERNHEIM, Ph.D. (Cambridge, 1928), *Professor of Pharmacology.*

KENNETH E. PENROD, Ph.D. (Iowa State, 1942), *Professor of Physiology.*

WILLIAM E. DETURK, Ph.D., M.D. (Duke, 1940; Vanderbilt, 1948), *Associate Professor of Pharmacology.*

MCCHESNEY GOODALL, Ph.D., M.D. (Karolinska Institute, 1950; Medical College of Virginia, 1951), *Visiting Associate Professor of Physiology.*

MACDONALD DICK, M.D. (Johns Hopkins, 1928), *Assistant Professor of Physiology and Pharmacology.*

FRANK L. ENGEL, M.D. (Johns Hopkins, 1938), *Assistant Professor of Physiology.*

WAYLAND E. HULL, Ph.D. (Duke, 1950), *Assistant Professor of Physiology.*

E. CROFT LONG, M.B., B.Surg. (London, 1952), *Assistant Professor of Physiology.*

FRED ZECHMAN, Ph.D. (Duke, 1956), *Instructor in Physiology.*

JOHN V. SALZANO, Ph.D. (Iowa, 1956), *Instructor in Physiology.*

ATHOS OTTOLENGHI, M.D. (Pavia, Italy, 1946), *Research Fellow in Pharmacology.*

ERNEST G. NEWMAN, M.D. (Duke, 1951), *Research Fellow in Physiology.*

NORMAN MARSHALL, Ph.D. (Harvard, 1956), *Laboratory Instructor in Physiology.*

KARL AGRE, Ph.D. (Hahnemann, 1956), *Laboratory Instructor in Pharmacology.*

HOWARD LANGLEY, *Technical Associate in Physiology.*

The course in medical physiology is given during the sixteen weeks of the second semester of the first year. There are lectures, laboratories and conferences each week in which are presented the general principles of human physiology and their general application to the practice of medicine. The physiology and biochemistry courses are closely integrated.

The course in pharmacology is taught in the first quarter of the second year (fourth quarter). Lectures, laboratories and conferences deal with the mode of action of drugs in terms of biochemical and physiological processes.

Physiological and Pharmacological Research. The facilities of the department include modern types of research equipment. There are special facilities for research in the fields of respiration, high altitude

physiology, circulation and cellular metabolism. Properly qualified students are encouraged to undertake original research in physiology and pharmacology under direction of various members of the staff.

Seminars. Each fall term a seminar for graduate students in physiology is conducted by the staff.

Preventive Medicine and Public Health

DAVID T. SMITH, M.D. (Johns Hopkins, 1922), *James B. Duke Professor of Bacteriology, Chairman of the Department and Associate Professor of Medicine.*

JAMES V. WARREN, M.D. (Harvard, 1939), *Professor of Medicine.*

JEROME S. HARRIS, M.D. (Harvard, 1933), *Professor of Pediatrics and Associate Professor of Biochemistry.*

ELBERT L. PERSONS, M.D. (Harvard, 1927), *Associate Professor of Preventive Medicine and Public Health, Associate Professor of Medicine, Director of Student Health.*

CAROLINE HELMICK, M.D. (Minnesota, 1933), *Associate in Preventive Medicine.*

SIDNEY S. CHIPMAN, M.D., M.P.H. (McGill, 1928; Yale, 1947), *Visiting Lecturer in Preventive Medicine and Public Health.*

BERNARD G. GREENBERG, Ph.D. (North Carolina State, 1949), *Visiting Lecturer in Preventive Medicine and Public Health.*

ROGER W. HOWELL, M.D. (Michigan, 1938), *Visiting Lecturer in Preventive Medicine and Public Health.*

HAROLD J. MAGNUSON, M.D. (Southern California, 1938), *Visiting Lecturer in Preventive Medicine and Public Health.*

EDWARD G. MCGAVRAN, M.D., M.P.H. (Harvard, 1928 and 1935), *Visiting Lecturer in Preventive Medicine and Public Health.*

EUGENE E. TAYLOR, M.D., M.P.H. (Washington, St. Louis, 1945; North Carolina, 1950), *Visiting Lecturer in Preventive Medicine and Public Health.*

W. G. BROWN, A.B. (North Carolina, 1932), *Instructor in Preventive Medicine and Public Health.*

ALBERT D. COOPER, M.D. (George Washington, 1932), *Instructor in Medicine.*

JESSE H. EPPERSON, B.S. (Oklahoma, 1914), *Lecturer in Preventive Medicine and Public Health.*

D. M. WILLIAMS, B.S. (North Carolina, 1910), *Lecturer in Preventive Medicine and Public Health.*

Preventive Medicine and Public Health. In the freshman year there are four lectures given to provide some basic orientation predicated upon the fact that disease has a community as well as a personal aspect and that the social component of illness is an important force in the work of the doctor as well as in the life of the community. The student is introduced to disease as a mass or community problem and to medicine as a social institution.

In the sophomore year there are a series of lectures. These cover the factors that are involved in causation of disease. The host factors, the environmental factors, and the various disease agents are inter-related. As a part of the host factors a series of lectures are devoted to the biological basis of genetics, genetic mechanisms, carrier states, and role of genetic constitution in pathogenesis of disease. During

the first semester the course is correlated with bacteriology, and the various levels of application of preventive medicine to specific diseases are stressed with lecture and case presentation. During the second semester a series of lectures on epidemiological methods of investigation are given. The class is then divided into units for the practical discussions of the application of preventive medicine to case material.

During the clinical years a series of correlative clinics are carried out. The various departments contribute to these. In addition stress is placed on the principles in certain out patient clinic functions.

Psychiatry

- EWALD W. BUSSE, M.D. (Washington Univ., 1942), *Professor and Chairman of the Department of Psychiatry.*
- BINGHAM DAL, Ph.D. (Univ. of Chicago, 1935), *Professor of Mental Hygiene.*
- LESLIE B. HOHMAN, M.D. (Johns Hopkins, 1917), *Professor of Psychiatry.*
- HANS LOWENBACH, M.D. (Hamburg, 1929), *Professor of Psychiatry.*
- BERNARD BRESSLER, M.D. (Washington Univ., 1942), *Associate Professor of Psychiatry.*
- R. CHARMON CARROLL, M.D. (Colorado, 1939), *Associate Professor of Psychiatry, Highland Hospital, Asheville, N. C.*
- LOUIS D. COHEN, Ph.D. (Duke, 1949), *Associate Professor of Medical Psychology and Chief of Clinical Psychology.*
- JOSEPH B. PARKER, JR., M.D. (Tennessee, 1941), *Associate Professor of Psychiatry.*
- JOHN M. RHOADS, M.D. (Temple Univ., 1943), *Associate Professor of Psychiatry.*
- JOHN FOWLER, M.D. (Bowman Gray, 1946), *Assistant Professor of Psychiatry.*
- JEWETT GOLDSMITH, M.D. (Maryland, 1942), *Assistant Professor of Psychiatry.*
- CHARLES LLEWELLYN, M.D. (Med. Coll. of Virginia, 1946), *Assistant Professor of Psychiatry.*
- WALTER D. OBRIST, Ph.D. (Northwestern Univ., 1950), *Assistant Professor in Medical Psychology.*
- OSCAR A. PARSONS, Ph.D. (Duke, 1953), *Assistant Professor in Medical Psychology.*
- GEORGE A. SILVER, M.D. (Duke, 1938), *Assistant Professor of Psychiatry.*
- ALBERT J. SILVERMAN, M.D. (McGill, 1949), *Assistant Professor of Psychiatry.*
- R. BURKE SUIT, M.D. (St. Louis, 1932), *Assistant Professor of Psychiatry.*
- WILLIAM WILSON, M.D. (Duke, 1947), *Assistant Professor of Psychiatry.*
- DONALD K. ADAMS, Ph.D. (Yale, 1927), *Consultant, Professor of Psychology.*
- WESTON LABARRE, Ph.D. (Yale, 1937), *Consultant, Professor of Anthropology.*
- ELIOT RODNICK, Ph.D. (Yale, 1936), *Consultant, Professor of Psychology.*
- DAVID A. YOUNG, M.D. (Harvard, 1931), *Lecturer in Psychiatry.*
- ROBERT L. CRAIG, M.D. (Johns Hopkins, 1935), *Associate in Psychiatry, Highland Hospital, Asheville, N. C.*
- ROBERT H. DOVENMUEHLE, M.D. (St. Louis, 1948), *Associate in Psychiatry.*
- FRANCES C. JEFFERS, M.A. (Columbia, 1945), *Research Associate in Psychiatry.*
- JACK RITCHIE, M.D. (Duke, 1943), *Associate in Psychiatry.*
- CHARLES SPIELBERGER, Ph.D. (Iowa, 1954), *Associate in Medical Psychology.*
- SANFORD I. COHEN, M.D. (Chicago Medical College, 1952), *Instructor in Psychiatry.*
- WILLIAM H. DOBBS, M.D. (Emory Univ., 1952), *Instructor in Psychiatry.*
- MILDRED LONG, M.S.W. (Tulane, 1948), *Instructor in Psychiatric Social Work.*
- FVALYN A. LYNCH, M.S.W. (Pennsylvania, 1949), *Instructor in Psychiatric Social Work.*

- JOAN M. MILLER, M.D. (New York Univ., 1952), *Instructor in Psychiatry*.
 RICHARD MEILLER, M.D. (State Univ. of New York, 1952), *Instructor in Psychiatry*.
 JOHN D. PATTON, M.D. (St. Louis, 1945), *Instructor in Psychiatry, Highland Hospital, Asheville, N. C.*
 DAVID L. ARENBERG, M.A. (Johns Hopkins, 1951), *Research Assistant in Medical Psychology*.
 CARL H. EISDORFER, M.A. (New York Univ., 1953), *Research Assistant in Medical Psychology*.
 MARY M. HUSE, M.A. (North Carolina, 1950), *Research Assistant in Medical Psychology*.
 KENNETH S. NICKERSON, M.A. (Dalhousie, 1952), *Research Assistant in Medical Psychology*.

RESIDENTS

- PER NYHUS, M.D. (Oslo, 1952), *Resident in Psychiatry*.
 ANNE E. SAGBERG, M.D. (Oslo, 1947), *Resident in Psychiatry, Highland Hospital, Asheville, North Carolina*.

ASSISTANT RESIDENTS

- PAUL ADAMS, M.D. (Columbia University Coll. of Physicians & Surgeons, 1955), *Assistant Resident in Psychiatry*.
 TEODORO BRAGANZA, M.D. (Philippines, 1952), *Assistant Resident in Psychiatry*.
 DOROTHY S. DOBBS, M.D. (George Washington University, 1956), *Assistant Resident in Psychiatry*.
 ROY J. ELLISON, M.D. (Medical Coll. of South Carolina, 1953), *Assistant Resident in Psychiatry*.
 GABRIEL FAGOT, M.D. (Temple University, 1946), *Assistant Resident in Psychiatry*.
 JERRY JEROME FLEISCHAKER, M.D. (University of Louisville, 1955), *Assistant Resident in Psychiatry*.
 WILLIAM R. GALEOTA, M.D. (New York Medical Coll., 1936), *Assistant Resident in Psychiatry*.
 ROBERT L. GREEN, M.D. (Hahnemann, Philadelphia, Pa., 1946), *Assistant Resident in Psychiatry*.
 DIETRICH HEYDER, M.D. (Frankfurt, Germany, 1954), *Assistant Resident in Psychiatry*.
 PHILIP J. MARCO, M.D. (Middlesex University, 1943), *Assistant Resident in Psychiatry*.
 THEODORE J. MARSHALL, M.D. (Jefferson Medical Coll. of Philadelphia, 1956), *Assistant Resident in Psychiatry*.
 PHILIP G. NELSON, M.D. (Catholic Univ. of Louvain, 1954), *Assistant Resident in Psychiatry*.
 ERNEST GUSTAVE NEWMAN, M.D. (Duke, 1954), *Assistant Resident in Psychiatry*.
 CLAUDE R. NICHOLS, M.D. (Baylor, 1946), *Assistant Resident in Psychiatry*.
 WARREN P. OLSON, M.D. (University of Wisconsin, 1953), *Assistant Resident in Psychiatry*.
 CESARINA PAOLI, M.D. (University of Florence, 1953), *Assistant Resident in Psychiatry*.
 MARLAN L. RHAME, JR., M.D. (Med. College of South Carolina, 1955), *Assistant Resident in Psychiatry*.
 MARVIN SILVERMAN, M.D. (Ottawa University, 1956), *Assistant Resident in Psychiatry*.
 VICTOR L. SLATER, JR., M.D. (Wayne State University, 1956), *Assistant Resident in Psychiatry*.
 GIBSON SMITH, M.D. (University of Wisconsin, 1944), *Assistant Resident in Psychiatry*.
 W. T. SMITH, M.D. (Medical College of Georgia, 1950), *Assistant Resident in Psychiatry*.

WILLIAM I. STRYKER, M.D. (St. Louis Univ. School of Medicine, 1953), *Assistant Resident in Psychiatry*.

HSIOH-SHAN WANG, M.D. (National Taiwan University, 1953), *Assistant Resident in Psychiatry*.

PSYCHOLOGY INTERNS IN THE DEPARTMENT OF PSYCHIATRY

RICHARD M. DUNHAM, B.A. (University of South Carolina, 1950)

WALTER C. HOOKS, A.B. (Baldwin-Wallace College, 1954)

The objectives of the undergraduate teaching program in the Department of Psychiatry are to: (a) Bring to the medical student the basic information which he requires to comprehend his role in the community as a physician, to understand his relationship with patients, to appreciate the impact of disease upon the patient and to understand the influence of the psychic processes. (b) Provide the student with the knowledge of interviewing techniques and psychotherapeutic skills which can be utilized in the general practice of medicine. Instruction begins in the first year with the class meeting for one hour a week throughout the year. The course, "Introduction to Human Development and Behavior" includes lectures, clinical demonstration of patients and small group discussions. During the second year psychiatric concepts are presented in a course called "Psychiatry and Disease" which presents in some detail the topography of the mind, the common mental mechanisms, the concept of the unconscious, and the effects of these various factors on disease. Psychiatric teaching is integrated with other disciplines in the course "Introduction to Clinical Medicine." Twelve lectures are presented dealing with psychosomatic medicine, and a total of 30 hours of small group instruction permits the students to become acquainted with and to practice interviewing techniques with patients. In the third year the student is assigned to the In-Patient Service of the Department of Psychiatry where he has an opportunity to come in contact with patients who have serious emotional disturbance. Emphasis is placed upon recognition and proper referral of seriously disturbed patients. Lectures and demonstrations conducted during the first two quarters of the third year are devoted to psychiatric disorders with a review of symptomatology, etiology and treatment. Each senior student spends a total of 44 hours in one quarter in the Out-Patient facility of the Department of Psychiatry. The senior student under close supervision, conducts psychotherapeutic interviews and observes the psychotherapeutic efforts of a senior psychiatrist.

Specialty training in the field of psychiatry is offered professionally qualified physicians who have completed at least one year of internship. Completion of such training meets the requirements of the American Board of Psychiatry and Neurology. The major areas of residency training are the Psychiatric In-Patient Service, the Adult

Out-Patient Clinic, Psychosomatic Medicine and the Durham Child Guidance Clinic.

Radiology

ROBERT J. REEVES, M.D. (Baylor, 1924), *Professor of Radiology and Chairman of the Department.*

GEORGE JAY BAYLIN, M.D. (Duke, 1937), *Professor of Radiology.*

WADE HENRY SHUFORD, M.D. (Rochester, 1948), *Instructor in Radiology.*

WILLIAM FRANCIS BARRY, JR., M.D. (Pennsylvania, 1946), *Associate Professor of Radiology and Chief of Service, Durham, F.A. Hospital.*

CHARLES L. RENNELL, M.D. (Yale, 1949), *Assistant Professor of Radiology.*

S. PAUL PERRY, M.D. (Univ. Chicago, 1926), *Assistant Professor of Radiology and Chief, Radiology Watts Hospital.*

AARON P. SANDERS, M.S. (Rochester, 1952), *Assistant Professor of Radiology, Director of Isotope Laboratory.*

JOSEPH K. ISLEY, M.D. (Bowman Gray, 1948), *Associate in Radiology.*

JOHN R. McLAREN, M.D. (Temple, 1948), *Associate in Radiology.*

JOHN F. SHERRILL, JR., M.D. (Bowman Gray, 1946), *Instructor in Radiology.*

GUY W. SCHLASEMAN, M.D. (Duke, 1946), *Instructor in Radiology.*

CYRUS L. GRAY, M.D. (Duke), *Associate in Radiology.*

THOMAS G. THURSTON, M.D. (Duke), *Associate in Radiology, Chief of Radiology, Rowan Memorial Hospital.*

ALLAN TAYLOR, M.D. (Duke, 1947), *Associate in Radiology.*

SIMMONS ISLER PATRICK, M.D. (Duke, 1950), *Associate in Radiology.*

MURRAY T. JACKSON, M.D. (Duke, 1951), *Associate in Radiology.*

JOHN EDMUND WEAR, M.D. (Alabama, 1945), *Associate in Radiology.*

RESIDENTS

SELBY EVANS COFFMAN, JR., M.D. (Louisville, 1950), *Resident and Instructor in Radiology.*

ARTHUR BASCOM CROOM, M.D. (Med. College of Virginia, 1940), *Resident and Instructor in Radiology.*

ASSISTANT RESIDENTS

HARRY H. MCGEE, M.D. (Duke, 1951)

GORDON L. HIXSON, M.D. (Tennessee, 1952)

JOHN ASHLEY GOREE, M.D. (Duke, 1955)

GEORGE JOSEPH RICHARDS, JR., M.D. (Johns Hopkins, 1951)

CLAUDE ALFRED SMITH, M.D. (Jefferson Med. College, 1953)

JAMES W. PROFFITT, M.D. (Med. College of Virginia, 1956)

ELLIOTT COGSWELL SHULL, JR., M.D. (Hahnemann, 1956)

The student teaching schedule in roentgenology consists of a course in roentgen diagnosis and a course in therapeutic radiology. The first is offered during each scholastic quarter on Tuesday and Thursday of each week. The fundamental physics of x-ray is discussed, with the chief emphasis being placed upon the anatomical, pathological and physiological bases for the interpretation of x-ray films. The course is conducted in seminar fashion and no formal lectures are given. The students participate in and lead discussions with the instructor serving as the moderator. An attempt is made to acquaint the student with

the aids of roentgenology in diagnostic problems. The correct use of x-rays in diagnosis is stressed.

Therapeutic radiology is given one hour weekly during each quarter. At these sessions the general problem of the treatment of benign, inflammatory and malignant lesions by x-ray and radium is discussed and the accepted views of the combination of these therapeutic agents with surgery is stressed. Representative cases are demonstrated, and the follow-up results are particularly stressed.

A limited number of senior students are permitted to attend routine film reading sessions in the Department of Radiology. They are also instructed in the fundamentals of fluoroscopic examinations and shown the many pitfalls of the inexperienced fluoroscopist.

X-ray conferences are scheduled with each specialty in the X-ray Conference room with weekly schedules. All x-ray cases on that service the preceding week are shown and briefly discussed for benefit of the house staff and attending students. At the present weekly conferences including the Ear, Nose and Throat, Orthopaedics, Neurosurgery, Thoracic surgery, Pediatrics, Cardiac, Gastro-intestinal, Urology are held and used as part of the teaching program. Tuesday and Friday afternoons special x-ray conferences of x-ray pathology are held. X-ray Pathology conference 5 to 6 P.M. each Wednesday afternoon is given in the autopsy room.

Each Wednesday evening a conference is held by the members of the x-ray staff and visiting radiologists. Difficult cases are brought up for discussion and diagnosis.

A regional x-ray conference is held the last Thursday in each month, alternating with the University of North Carolina.

A complete radioisotope laboratory facility is available for diagnostic and therapeutic applications of radioisotopes. Radio-iodine is used routinely in the evaluation of thyroid function and in the treatment of hyperthyroidism and thyroid carcinoma. Radiophosphorus and radiogold are used in cancer therapy.

An investigative program using radioisotope labeled materials is concerned with normal and abnormal physiology of the gastro-intestinal tract. As a result of this, routine clinical tests using radioisotope labeled compounds are now in use in the evaluation of gastro-intestinal function. Other research programs in progress are concerned with cardiovascular, pulmonary and renal function, both in normal and abnormal patients.

A training program in the physics, radiation protection, routine handling, and application of radioisotopes in medicine is a part of the Radiology Resident's Program. This is available to a select few of the residents in other departments.

Surgery

- DERYL HART, M.D. (Johns Hopkins, 1921), *Professor of Surgery and Chairman of the Department.*
- EDWIN P. ALYEA, M.D. (Johns Hopkins, 1923), *Professor of Urology.*
- W. BANKS ANDERSON, M.D. (Johns Hopkins, 1924), *Professor of Ophthalmology.*
- RALPH A. ARNOLD, M.D. (University of Buffalo, 1936), *Professor of Otology and Associate Professor of Otolaryngology and Ophthalmology.*
- LENOX D. BAKER, M.D. (Duke, 1933), *Professor of Orthopaedic Surgery.*
- JOSEPH W. BEARD, M.D. (Vanderbilt, 1929), *Professor of Surgery in Charge of Experimental Surgery and Associate Professor of Virology.*
- JOHN E. DEES, M.D. (University of Virginia, 1933), *Professor of Urology.*
- WATT W. EAGLE, M.D. (Johns Hopkins, 1925), *Professor of Otolaryngology.*
- CLARENCE E. GARDNER, JR., M.D. (Johns Hopkins, 1928), *Professor of Surgery.*
- KEITH S. GRIMSON, M.D. (Rush Medical College, 1933), *Professor of Surgery.*
- GUY L. ODOM, M.D. (Tulane University, 1933), *Professor of Neurosurgery.*
- KENNETH L. PICKRELL, M.D. (Johns Hopkins, 1935), *Professor of Plastic and Maxillo-facial Surgery.*
- WILL C. SEALY, M.D. (Emory, 1936), *Professor of Thoracic Surgery.*
- C. RONALD STEPHEN, M.D., C.M. (McGill University, 1940), *Professor of Anesthesiology and Chief of Division of Anesthesiology.*
- BARNES WOODHALL, M.D. (Johns Hopkins, 1930), *Professor of Neurosurgery.*
- IVAN W. BROWN, JR., M.D. (Duke, 1940), *Associate Professor of Surgery.*
- J. LEONARD GOLDNER, M.D. (University of Nebraska, 1943), *Associate Professor of Orthopaedic Surgery.*
- RAYMOND W. POSTLETHWAIT, M.D. (Duke, 1937), *Associate Professor of Surgery and Chief of Surgical Service, V. A. Hospital, Durham, N. C.*
- JAMES H. SEMANS, M.D. (Johns Hopkins, 1936), *Associate Professor of Urology.*
- FREDERICK W. STOCKER, M.D. (Universitaet of Bern, Switzerland, 1918), *Associate Professor of Ophthalmology.*
- WILLIAM G. ANLYAN, M.D. (Yale University, 1949), *Assistant Professor of Surgery.*
- MARCUS L. DILLON, M.D. (Duke, 1948), *Assistant Professor of Surgery.*
- MICHEL BOURGEOIS-GAVARDIN, M.D. (Duke, 1955), *Assistant Professor of Anesthesiology.*
- LEONARD W. FABIAN, M.D. (University of Arkansas, 1951), *Assistant Professor of Anesthesiology.*
- NICHOLAS G. GEORGIADIS, M.D. (Duke, 1949), *Assistant Professor of Plastic Surgery.*
- DORIS C. GROSSKREUTZ, M.D. (University of Illinois, 1942), *Assistant Professor of Anesthesiology and Chief of Anesthesiology, V.A. Hospital, Durham, N. C.*
- RODERICK ORMANDY, Ph.D. (Northwestern, 1953), *Assistant Professor of Medical Speech Pathology.*
- WILLIAM P. J. PEETE, M.D. (Harvard, 1947), *Assistant Professor of Surgery and Assistant to the Dean.*
- WILLIAM W. SHINGLETON, M.D. (Bowman Gray, 1943), *Assistant Professor of Surgery.*
- THEODORE W. ATWOOD, D.M.D. (Harvard, 1932), *Associate in Dentistry.*
- DOROTHY W. BEARD, R.N. (Vanderbilt, 1929), *Associate in Surgery and Research Associate in Experimental Surgery.*
- BYRON M. BLOOR, M.D. (Duke, 1945), *Associate in Neurosurgery and Chief of Neurosurgical Service, V. A. Hospital.*
- EVERETT I. BUGG, JR., M.D. (Johns Hopkins, 1937), *Associate in Orthopaedics.*
- JOHN COUGHLIN, M.D. (Maryland, 1943) *Associate in Anesthesiology.*
- SARA J. DENT, M.D. (Medical College of S. C., 1945), *Associate in Anesthesiology.*

- GEORGE B. FERGUSON, M.D. (Jefferson Medical College, 1932), *Associate in Bronchoscapy.*
- WILLIAM F. HOLLISTER, M.D. (Duke, 1938), *Associate in Surgery; Chief of General and Thoracic Surgery, Moore County Hospital, Pinehurst, N. C.*
- SAMUEL D. MCPHERSON, M.D. (Johns Hopkins, 1943), *Associate in Ophthalmology.*
- NORMAN F. ROSS, D.D.S. (Temple University, 1937), *Associate in Dentistry and Acting Head of Division of Dentistry.*
- H. MAX SCHIEBEL, M.D. (Johns Hopkins, 1933), *Associate in Surgery.*
- W. GLENN YOUNG, M.D. (Duke, 1947), *Associate in Surgery.*
- GEORGE S. BEAUDREAU, Ph.D. (Oregon State, 1954), *Research Associate in Experimental Surgery.*
- M. CAROLINE BECKER, M.D. (Johns Hopkins, 1950), *Research Associate in Experimental Surgery.*
- ROBERT A. BONAR, Ph.D. (University of California, 1953), *Research Associate in Experimental Surgery.*
- DONALD F. PARSONS, M.D. (St. Bartholomew's, 1957), *Research Associate in Experimental Surgery.*
- ALFRED M. WALLBANK, Ph.D. (Michigan State, 1956), *Research Associate in Experimental Surgery.*
- JULIAN E. JACOBS, M.D. (University of Nebraska, 1935), *Lecturer in Orthopaedics; Chief of Orthopaedic Surgery, Charlotte, (N. C.), Memorial Hospital.*
- LESLIE C. MEYER, M.D. (University of Nebraska, 1943), *Lecturer in Orthopaedics, Orthopaedic Surgeon, Shriners' Hospital for Crippled Children, Greenville, S. C.*
- GEORGE R. MILLER, M.D. (University of Rochester, 1943), *Lecturer in Orthopaedics; Associate Surgeon, N. C. Orthopaedic Hospital, Gastonia, N. C.*
- OSCAR L. MILLER, M.D. (Emory University, 1912), *Lecturer in Orthopaedics; Orthopaedic Surgeon, Charlotte, (N. C.), Memorial Hospital.*
- WILLIAM MCK. ROBERTS, M.D. (Tufts, 1925), *Lecturer in Orthopaedics; Surgeon-in-Chief, N. C. Orthopaedic Hospital, Gastonia, N. C.*
- FRANK H. STELLING, M.D. (University of Georgia, 1938), *Lecturer in Orthopaedics; Chief Surgeon, Shriners' Hospital for Crippled Children, Greenville, S. C.*
- MARY B. CAMPBELL, R.N. (St. Luke's Hospital, 1937), *Instructor in Anesthesiology and Chief Nurse Anesthetist.*
- GORDON M. CARVER, JR., M.D. (Duke, 1947), *Instructor in Surgery.*
- RAPHAEL W. COONRAD, M.D. (Duke, 1947), *Instructor in Orthopaedics.*
- THOMAS B. DAMERON, M.D. (Duke, 1947), *Instructor in Orthopaedics; Raleigh, N. C.*
- JOHN GLASSON, M.D. (Cornell, 1943), *Instructor in Orthopaedics.*
- ROBERT MUSGRAVE, M.D. (Tennessee, 1946), *Instructor in Orthopaedics, Danville, Va.*
- KENNETH R. PFEIFFER, D.D.S. (University of Louisville, 1937), *Instructor in Dentistry and Chief of Dental Service, V. A. Hospital.*
- RICHARD B. RANKIN, JR. (Duke, 1953), *Instructor in Ophthalmology and Otolaryngology.*
- BAXTER B. SAPP, D.D.S. (Temple University, 1951), *Instructor in Dentistry.*
- WILLIAM W. VALLOTTON (Georgia, 1952), *Instructor in Ophthalmology and Otolaryngology. (On leave.)*
- CHESTER R. TAYLOR, *Technical Associate in Surgery.*
- BERT R. TITUS, *Technical Associate in Orthosis.*

FELLOWS

- Y. CHANGCHIEN, M.D. (Nippon, Japan, 1943), *Fellow in Neurosurgery.*
- ANNABELLE CRADDOCK, M.D. (Duke, 1953), *Fellow in Anesthesiology.*
- WILLIAM E. HUGER, JR., M.D. (Emory, 1953), *Fellow in Surgery.*
- ALAN MAURICE LESAGE, M.D. (University of Paris, 1949), *Voluntary Fellow in Thoracic Surgery.*

WIRT W. SMITH, M.D. (Univ. of Texas, 1951), *Fellow in Surgery.*

ORMOND A. WEIR, M.D., C. M. (Queens University, 1951), *Fellow in Surgery.*

RESIDENTS

FRANKLIN E. ALTANY, M.D. (Duke, 1952), *Resident and Instructor in Plastic Surgery.*

FRANK CLIPPINGER, M.D. (Washington University, 1952), *Resident, Instructor, and Fellow in Orthopaedics.*

H. RICHARD CONNELL (Queens, 1954), *Resident and Instructor in Ophthalmology and Otolaryngology.*

BENJAMIN H. FLOWE, M.D. (Duke, 1949), *Resident and Instructor in Surgery.*

ROBERT A. GOWDY, M.D. (Duke, 1947), *Chief Resident, Instructor, and Fellow in Surgery.*

EARL HALTIWANGER, M.D. (Duke, 1951), *Resident and Instructor in Urology.*

JOSEPH R. MCWHIRT, M.D. (George Washington, 1951), *Resident and Instructor in Plastic Surgery.*

JAMES F. O'NEILL, M.D. (Duke, 1954), *Resident and Instructor in Ophthalmology and Otolaryngology.*

DAVID H. REYNOLDS, M.D. (Duke, 1951), *Resident and Instructor in Neurosurgery.*

JOSEPH J. RUFF, D.D.S. (Georgetown, 1955), *Resident in Oral Surgery.*

KOJI TAKESHIMA, M.D. (Kyoto, 1942), *Resident and Instructor in Anesthesiology.*

ROBERT B. TRUMBO, M.D. (Emory, 1952), *Resident, Instructor, and Fellow in Surgery.*

JESSE WILLIAMS, M.D. (Duke, 1952), *Resident and Instructor in Urology.*

JAMES WRAY, M.D. (Tennessee, 1950), *Resident, Instructor, and Fellow in Orthopaedics.*

W. GLENN YOUNG, M.D. (Duke, 1947), *Resident, Associate, and Fellow in Surgery.*

ASSISTANT RESIDENTS

JERRY E. ADAMSON, M.D. (Duke, 1954), *Assistant Resident in Surgery.*

BASIL M. BOYD, JR., M.D. (Bowman Gray, 1953), *Assistant Resident in Orthopaedics N. C. Orthopaedic Hospital, Gastonia, N. C.*

DELOS BOYER, M.D. (George Washington, 1950), *Assistant Resident in Orthopaedics.*

HENRY A. CALLAWAY, JR., M.D. (Vanderbilt, 1954), *Assistant Resident in Surgery and Fellow in Thoracic Surgery.*

DON W. CHAMBLIN, M.D. (Arkansas, 1950), *Assistant Resident in Anesthesiology.*

GEORGE J. D'ANGELO, M.D. (Rochester, 1951), *Assistant Resident, Instructor, and Fellow in Surgery.*

GEORGE D. DELAUGHTER, JR., M.D. (Duke, 1954), *Assistant Resident and Fellow in Surgery.*

ANGELES DIAZ, M.D. (Temple University, 1943), *Assistant Resident in Surgery.*

RICHARD A. DODELIN, M.D. (Emory, 1951), *Assistant Resident and Fellow in Orthopaedics (Georgia Warm Springs Foundation).*

JOHN T. EDMONDS, M.D. (Medical College of Virginia, 1954), *Assistant Resident in Ophthalmology and Otolaryngology.*

LEE W. ELGIN, M.D. (University of Maryland, 1954), *Assistant Resident in Ophthalmology.*

FRANK V. FAZIO, M.D. (Emory, 1953), *Assistant Resident in Urology.*

WILLIAM H. M. FINNEY, M.D. (Johns Hopkins, 1952), *Assistant Resident in Neurosurgery.*

BENJAMIN FLOYD, M.D. (Univ. of Texas, 1953), *Assistant Resident in Surgery.*

RICHARD D. FLOYD, M.D. (Yale, 1952), *Assistant Resident in Surgery.*

GEORGE L. FORD, JR., M.D. (St. Louis University, 1954), *Assistant Resident and Fellow in Orthopaedics.*

- JOHN S. FORREST, M.D. (N. Y. State College of Medicine, Syracuse, 1953), *Assistant Resident and Fellow in Orthopaedics*.
- EARL P. GALLEHER, JR., M.D. (Johns Hopkins, 1953), *Assistant Resident in Urology*.
- JAMES GLENN, M.D. (Duke, 1952), *Assistant Resident in Urology*.
- CESAR A. GONZALEZ, M.D. (Lima, Peru, 1954), *Assistant Resident in Ophthalmology*.
- WALTER E. HEYSE, M.D. (Ohio State, 1955), *Assistant Resident in Surgery*.
- LUTHER C. HOLLANDSWORTH, M.D. (Bowman Gray, 1951), *Assistant Resident in Anesthesiology*.
- H. LOGAN HOLTGREWE, M.D. (Univ. of Kansas, 1955), *Assistant Resident in Surgery*.
- JAMES JACKSON, M.D. (Duke, 1956), *Assistant Resident in Surgery*.
- JAY R. JOHNSON, M.D. (St. Louis University, 1953), *Assistant Resident in Surgery*.
- WILLIAM M. JONES, M.D. (McGill, 1954), *Assistant Resident in Anesthesiology*.
- LOTHAR KAUL, M.D. (Univ. of Marbury, Germany, 1952), *Assistant Resident in Otolaryngology*.
- CHARLES KECK, JR., M.D. (Duke, 1953), *Assistant Resident in Orthopaedics*.
- JAMES M. KELLEY, M.D. (Duke, 1954), *Assistant Resident and Fellow in Orthopaedics*.
- JOSEPH D. KEPES, M.D. (Rochester, 1949), *Assistant Resident in Plastic Surgery*.
- DONALD KERNODLE, M.D. (Duke, 1953), *Assistant Resident in Ophthalmology*.
- ELDON KETRING, M.D. (Univ. of Illinois, 1946), *Assistant Resident and Fellow in Orthopaedics*.
- JOHN J. KING, M.D. (St. Louis Univ., 1955), *Assistant Resident in Surgery*.
- HANS KOTTER, M.D. (Frankfurt Univ. Med. School, 1951), *Assistant Resident in Orthopaedics, Watts Hospital, Durham, N. C.*
- J. H. A. LAWRENCE, M.D. (McGill, 1950), *Assistant Resident in Anesthesiology*.
- DONALD E. MCCOLLUM, M.D. (Bowman Gray, 1953), *Assistant Resident in Surgery*.
- JULIETA PEREZ MEDRANO, M.D. (Mexico, 1952), *Assistant Resident in Anesthesiology*.
- ELLIOTT MENDENHALL, M.D. (Baylor, 1955), *Assistant Resident in Surgery*.
- ANDRES T. MELERO, M.D. (Duke, 1950), *Assistant Resident and Instructor in Surgery*.
- GLENN MUSSELMAN, M.D. (Temple, 1954), *Assistant Resident in Orthopaedics*.
- JOHN NORK, M.D. (Columbia, College of Surgeons and Physicians, 1953), *Assistant Resident in Orthopaedics*.
- G. ROBERT NUGENT, M.D. (Cincinnati, 1953), *Assistant Resident in Neurosurgery*.
- WILSON L. PAVAN, M.D. (M. Gerais, Brazil, 1956), *Assistant Resident in Anesthesiology*.
- JAMES PELTIER, D.D.S. (Loyola Univ. of New Orleans, 1954), *Assistant Resident in Oral Surgery*.
- ROBERT L. PHILLIPS, M.D. (Jefferson Medical College, 1952), *Assistant Resident in Neurosurgery*.
- ELI F. RICHARD, M.D. (Wayne Univ., 1952), *Assistant Resident in Plastic Surgery*.
- SHALER S. ROBERTS, M.D. (Medical College of Alabama, 1954), *Assistant Resident in Ophthalmology and Otolaryngology*.
- MOHAMED EL-HADI SALEM, M.D. (Kasr El-Eini Medical School, Cairo, Egypt, 1949), *Assistant Resident and Instructor in Surgery*.
- JAMES F. SCHAUBLE, M.D. (Johns Hopkins, 1954), *Assistant Resident and Fellow in Surgery*.
- HERMAN SCHREIBER, M.D. (Western Reserve, 1950), *Assistant Resident and Fellow in Orthopaedics (Shriners' Hospital, Greenville, S. C.)*.
- OTTO K. STEWART (Georgetown Univ., 1952), *Assistant Resident in Orthopaedics*.
- JOHN W. SULLENBERGER, M.D. (Duke, 1951), *Assistant Resident and Instructor in Surgery*.
- WILLIAM K. TAYLOR, M.D. (Tulane, 1952), *Assistant Resident in Anesthesiology*.

- EMMET THORPE, M.D. (George Washington, 1951), *Assistant Resident in Orthopaedics (Shriners' Hospital, Greenville, S. C.)*.
- GEORGE T. TINDALL, M.D. (Johns Hopkins, 1952), *Assistant Resident in Neurosurgery*.
- MARY BERCOVITZ WILLIAMS, M.D. (Duke, 1955), *Assistant Resident in Anesthesiology*.
- JAMES R. WILSON, M.D. (Medical College of S. C., 1954), *Assistant Resident in Surgery*.
- ROBERT M. WOOLF, M.D. (Univ. of Utah, 1946), *Assistant Resident in Plastic Surgery*.
- R. LEWIS WRIGHT, M.D. (Medical College of Virginia, 1955), *Assistant Resident in Surgery*.

INTERNS

- W. LESTER ADCOCK, M.D. (Bowman Gray, 1956), *Intern in Surgery*.
- W. BANKS ANDERSON, JR., M.D. (Harvard, 1956), *Intern in Surgery*.
- THOMAS H. BAKER, JR., M.D. (Vanderbilt, 1956), *Intern in Surgery*.
- JAMES H. CALLAWAY, M.D. (Vanderbilt, 1956), *Intern in Surgery*.
- JACOB I. FABRIKANT, M.D. (McGill, 1956), *Intern in Surgery*.
- WILLIAM A. HUNTER, JR., M.D. (Vanderbilt, 1956), *Intern in Surgery*.
- PAUL A. JOHNSON, M.D. (Duke, 1957), *Intern in Surgery*.
- DONALD H. KELLER, M.D. (Duke, 1957), *Intern in Surgery*.
- PHILIP C. KISTLER, M.D. (Vanderbilt, 1956), *Intern in Surgery*.
- HAYNER H. PARISH, JR., M.D. (Washington University, 1956), *Intern in Surgery*.
- FRANKLIN V. PEALE, M.D. (Johns Hopkins, 1956), *Intern in Surgery*.
- JERE EDWARD ROE, D.D.S. (University of Tennessee, 1953), *Intern in Oral Surgery*.
- MELVIN SPIRA, M.D. (University of Georgia, 1956), *Intern in Surgery*.
- CHARLES A. WILKINSON, M.D. (Duke, 1956), *Intern in Surgery*.
- DAVID M. WOODHEAD, M.D. (Vanderbilt, 1956), *Intern in Surgery*.

Introduction to Surgical Technique. This course is given in the 5th quarter of the curriculum and is designed primarily for instruction and practice in the principles of asepsis and their application in surgery. This is accomplished through the medium of a series of major operative procedures on animals under conditions closely simulating those in human surgery. In the process, the student receives intensive training in the techniques fundamental to operative surgery and to the principles and practice of surgical anesthesia.

General Surgery. In the sixth quarter the students, during their course in physical diagnosis, attend clinics and demonstrations arranged to familiarize them with the techniques of examinations and diagnostic procedures used in general surgery and the surgical specialties. They also have the opportunity in this quarter to become familiar with certain basic principles in aseptic and atraumatic surgery and in isolation technique. The *junior* students, during their surgical quarter, attend ward rounds in surgery and the surgical specialties, act as clinical clerks on the wards and assist in the operative treatment of patients assigned to them. The surgical students in the *senior* year attend ward rounds in general surgery and the surgical specialties in the mornings and assist in the surgical out-patient clinics in the after-

noon. Also in groups of two for the proportionate time available they are assigned to the emergency division of the out-patient clinic where they assist in the diagnosis and care of urgent conditions.

Otolaryngological Division: An introductory course of instruction in the use of otolaryngological instruments, with a review of normal anatomy, is given to second year students in the sixth quarter. Senior students in the surgical quarter are assigned for two weeks to the service, during which time they devote their duties to out-patient, ward—both public and private—work, operating room and are available for all ward rounds. Eleven hours of didactic lectures are given in the Surgical quarter. A hearing-speech clinic has been initiated. Evaluation of hearing is being done with specialized equipment in sound treated rooms. Time consuming hearing tests, such as galvanic skin response, are done by special appointments.

Ophthalmological Division. In the second year as a part of the course in physical diagnosis students are instructed in the use and application of the ophthalmoscope, perimeter, and other diagnostic instruments commonly used in Ophthalmology. In the fourth year students are assigned for one week (40 hours) to the ophthalmic division where opportunity is provided for instruction in ophthalmic disease, in the treatment of ophthalmic emergencies, and in recognition of ophthalmic signs useful in the over-all evaluation of the patient in relation to systemic disease. Also fourth year students on election may attend weekly rounds in medical ophthalmoscopy and in neurophthalmology.

Orthopaedic Division. In the sixth quarter an introductory course is given. During the surgical quarters the junior and senior students attend weekly ward rounds of one hour each in orthopaedics and fractures. Students in their senior surgical quarter are assigned in rotation to the orthopaedic out-patient clinic. These students also attend orthopaedic staff rounds at 5:30 P.M. Mondays through Fridays. An elective course in the treatment of fractures, limited to three students, is offered during the junior and senior surgical quarters. An elective course in physical therapy is also offered during these quarters. Arrangements may be made for students who so desire to do research or experimental work. They may also attend the state orthopaedic clinics as held.

Urologic Division. In the sixth quarter, second-year students are given a course of lectures and practical demonstrations in urologic physical diagnosis in the normal individual. Ward rounds on urologic patients are given every Saturday at 8:30 A.M. for third- and fourth-year students in their surgical quarter. Small groups are selected from the senior surgical group of students and assigned in rotation to the urologic department for concentrated study for a two week period.

They spend all of their time working with the House Patients and Out-Patients in Urology Clinic. They attend all Urology Rounds, Staff Conferences and Journal Club Meetings. Rounds are given also every Wednesday afternoon at 4:00 P.M. for the students in their Surgical Quarter. The students assigned to Urology work with the Upper Staff every morning and the Upper and House Staff in the Urology Clinic in the afternoon. There is the closest association and constant supervision of these students by both the Upper and House Staff.

Division of Plastic, Maxillofacial, and Oral Surgery. Didactic lectures are given to both the third- and fourth-year students to familiarize them with the basic principles of plastic, reconstructive, and destructive procedures. Bedside ward rounds and demonstrations are held twice weekly to illustrate these basic phenomena of trauma, disease, and reconstruction. Fourth-year students work in the Plastic Surgical Clinic which meets daily, with special reference on Wednesday which is the Plastic Surgical and Oncology return or follow-up day. Opportunity is afforded interested students to observe moulage and cast work, cosmetic restoration of color, the making of prosthetic appliances, etc. The Oral Surgical Clinic has three dentists and oral surgeons in attendance and is in operation five and one-half days each week. Associated closely and allied with the plastic surgical service, is the Medical Speech Pathologist and Audiologist, who has charge of the Speech Correction Program.

The Division of Medical Speech Pathology will work in close cooperation with the Division of Plastic and Oral Surgery, the Division of Otolaryngology, and the Departments of Pediatrics and Psychiatry. Weekly lectures are given to familiarize students with the various types of speech defects and abnormalities which are encountered in both children and adults. The pre- and postoperative followup cleft palate patients are seen and evaluated each Wednesday afternoon in conjunction with the Plastic Surgical Clinic. Clinics will be arranged as desired with other departments. Speech instruction and therapy are given daily by appointment.

Neurosurgical Division. During all four quarters, separate weekly ward rounds are held for the junior and senior surgical groups. Emphasis in these rounds is placed upon the recognition of neurosurgical problems, followed by observation of the operative and post-operative procedures. Weekly x-ray and pathological conferences are held, and these may be attended by interested individuals. Tumor clinic conferences are held bi-monthly, on each second and third Thursday of the month.

Division of Thoracic Surgery. During the academic year ward rounds, lectures and demonstrations are held to acquaint the third-

and fourth-year students with the principles and practice of surgery of the chest. The anatomy and physiology of the respiration and circulation are reviewed and their application to thoracic surgery is stressed. X-ray diagnosis is emphasized and frequent pathology conferences are held to give the students a well-rounded knowledge of the surgical diseases of the chest.

Dentistry. Second-year students, in the sixth quarter, are instructed in the principles of dentistry.

Division of Anesthesiology. Junior and senior students, are given a series of lectures by the medical anesthesiologists in the Amphitheatre during the surgical lecture hour. Following a brief history of anesthetic drugs, the response of the body to such drugs is discussed. The physiological basis of the reactions encountered in the operating room is stressed and the rationale for choice of agents for various patients is presented. A six days' concentrated course of training in the administration of anesthetic agents is given to each senior medical student during the senior surgical quarter. These students observe and administer anesthetics under the supervision of staff anesthesiologists.

Legal Medicine Toxicology

HAYWOOD M. TAYLOR, Ph.D., *Professor of Toxicology and Associate Professor of Biochemistry.*

J. B. BRADWAY, A.M., LL.B., *Professor of Law.*

E. C. BRYSON, LL.B., *Associate Professor of Law.*

W. D. FORBUS, M.D., *Professor of Pathology.*

D. T. SMITH, M.D., *Professor of Bacteriology and Associate Professor of Medicine.*

This course embraces a discussion of the relation of physicians to legal criminal procedures, jurisdiction of the coroner and medical examiner, laws governing the dead human body, personal identity of the living, and the dead, the medicolegal autopsy, traumatic, injuries and fractures, rape, abortion, asphyxial death, homicidal, suicidal, and industrial poisoning, alcoholism, the examination of blood, stains, fibers, and the detection of malingering. This course is open to junior and senior students and is given in alternate years. Discussions of medicolegal problems for the house staff and senior students, and joint conferences of the medical and law students also are held.

Undergraduate Cancer Training Program

(Supported by a grant in aid from the U. S. Public Health Service)

Coordinator: WILEY D. FORBUS, M.D.

Social Service Worker: ISABEL PELTON.

During the first quarter, a course in surgical pathology is available to interested senior students. Classes are held twice weekly; each class

is two hours. The sessions are informal. Gross and microscopic materials with clinical abstracts are readily available. Clinico-pathological correlation is stressed throughout the course.

During the second and third quarters, weekly seminars are held on various phases of the tumor problem. Clinico-pathological correlation is stressed as the viewpoints of the clinician, radiologist, and pathologist are presented. General practitioners, members of the clergy, the social service division, and nursing staff are invited to discuss certain aspects in the care of patients with neoplasms.

In addition, the Undergraduate Cancer Training Program staff participates in the teaching of neoplasia to the sophomore students. This is done as a supplementary program to the students as they are being taught the principles of neoplastic disease by the Department of Pathology. New material is presented to them, and here the clinico-pathological approach to the problem of neoplasia has special emphasis. In this phase of the program those regions of the body in which the frequency of tumors is highest are selected for study.

The Program, through its secretarial and social service personnel and its follow-up studies, is a valuable adjunct in the clinical training of the students. Contact is maintained with discharged patients and regularly scheduled appointments are made for their return visits to the various outpatient departments for periodic evaluation and indicated therapy. The program maintains an active tumor registry and, through the secretarial staff, this information is made available for study of particular phases of the tumor program.

A special feature of this teaching activity is the individual student project program. Twenty tumor study projects are planned for volunteer students, each project dealing with a particular problem in neoplasia. These projects are undertaken by students entering their third undergraduate year and continue through the fourth undergraduate year. This program is under the direction of the Coordinator, each student being guided in the accomplishment of his project by a member of the clinical staff who serves as his personal tutor.

Standing Committees of The School of Medicine

ADMISSIONS

J. E. Markee (Chairman), Fetter, Hendrix, Peete, Penrod, and Rhoades.

BEAUMONT

J. W. Beard (Chairman), Engel, Markee and Rogers.

BORDEN AWARD

K. S. Grimson (Chairman), Hendrix and Pickrell.

BUILDING

L. E. Swanson (Chairman), Busse, Carter, Miss Clark, Forbus, Harris, Hart, and Stead.

CANCER TRAINING

W. D. Forbus (Chairman), Hart and Reeves.

CARDIO-VASCULAR TRAINING

K. S. Grimson (Chairman), Hall, Harris and Stead.

CONTINUATION EDUCATION

W. M. Nicholson (Chairman), Baylin, Markee and Miss Wien.

CO-ORDINATION OF PARAMEDICAL SERVICES

K. E. Penrod (Chairman), Brown, Cahoon, Conant, Handler, Markee, Swanson, Taylor, Misses Clark and Kaiser.

CURRICULUM

W. C. Davison (Chairman), Busse, Callaway, DeMaria, Harris, Markee, McIntosh, Penrod, Porter and Woodhall.

DURHAM VETERANS HOSPITAL

John B. Hickam (Chairman), Lowenbach, Baylin, Margolis, Ross, Shingleton.

HANES FUND

Deryl Hart (Chairman), Harris, Semans and Smith.

HOSPITAL ADMINISTRATION

F. R. Porter (Chairman), Busse, Carter, Davison, Forbus, Hart, Pyne, Smith, Stead, Swanson and Wright, Mrs. E. W. Martin.

HOSPITAL RECORDS

E. L. Persons (Chairman), Lenox Baker, Gardner, Porter, Mrs. Bufkin, Miss Clark.

ISOTOPE

Philip Handler (Chairman), Baylin, Harris, Nicholson, Porter, Reeves, Shingleton, and Woodhall.

LAY EDUCATION OF MEDICAL AFFAIRS

G. J. Baylin (Chairman), DeMaria, Weisend, Elon Clark.

LIBRARY

Mrs. J. H. Semans (Chairman), Engl, Persons, Schwert and Semans.

MEDICAL ART AND ILLUSTRATION

J. W. Beard (Chairman), Markee and Clark.

MEDICAL EDUCATION FOR NATIONAL DEFENSE

J. K. Isley (Chairman). Anyan, Fetter, Lowenbach, Penrod, Sanders and Warren.

PATIENT POLICY

F. R. Porter (Chairman), Busse, Carter, Cobb, Davison, Forbus, Hart, Harris, Jordan, McIntosh, Peete, Penrod, Reeves, Raper and Stead.

PHYSICAL AND OCCUPATIONAL THERAPY

L. D. Baker (Chairman), deGravelles, Hall, Lowenbach, Markee, Persons, Porter, Misses Huckabee, Kaiser and Watson.

REHABILITATION

J. H. Semans (Chairman), Baker, Busse, deGravelles, Orgain, Woodhall, Porter, Misses Jacobansky, Kaiser and Wien.

SOCIAL SERVICE

W. M. Nicholson (Chairman), Grimson, Harris, Lowenbach, Persons, Porter and Miss Wien.

STUDENT FELLOWSHIP

F. G. Hall (Chairman), Hickam and Sealy.

STUDENT TECHNICIANS

H. M. Taylor (Chairman), Margolis, Rundles and Smith.

TRENT PRIZE

J. E. Markee (Chairman), Carter and Gardner.

Duke Hospital

Administrative Staff

- F. ROSS PORTER, B.S., *Superintendent and Professor of Hospital Administration.*
LOUIS E. SWANSON, A.B., *Assistant Superintendent and Associate Professor of Hospital Administration.*
CHARLES H. FRENZEL, A.B., *Assistant Superintendent and Associate Professor of Hospital Administration.*
DEWITT WRIGHT, B.S., J.D., *Assistant Superintendent and Associate in Hospital Administration.*
LEMUEL R. JORDAN, A.B., M.A., *Assistant Superintendent, Director of the Clinic and Assistant Professor of Hospital Administration.*
JOHN M. MCBRYDE, A.B., *Administrative Assistant.*
RICHARD A. BINDEWALD, A.B., *Personnel Officer.*
THEODORE W. MINAH, B.S., *Advisor in Food Service Administration.*

Private Diagnostic Clinic Staff

- C. H. COBB, Ph.G., *Business Manager, Medical Division.*
HENRY BERTRAND, B.B.A., B.S., *Assistant Business Manager, Medical Division.*
E. S. RAPER, A.B., *Business Manager, Surgical Division.*
R. N. CRENSHAW, *Assistant Business Manager, Surgical Division.*

Technical Staff and Heads, Hospital Divisions

- PAUL WESLEY AITKEN, A.B., B.D., *Chaplain.*
RUSSELL L. DICKS, A.B., B.D., D.D., *Director, Clinical Pastoral Training.*
ELSIE W. MARTIN, M.S., *Director and Professor of Dietetics.*
I. THOMAS REAMER, Ph.G., *Pharmacist and Associate in Pharmacy.*
JANET WIEN, A.B., M.S., *Director and Assistant Professor of Medical Social Service.*
J. HARNED BUFKIN, R.N., R.R.L., *Medical Record Librarian and Assistant Professor of Medical Record Library Science.*
LELIA CLARK, R.N., B.S., M.A., *Director Nursing Service and Professor of Nursing.*
HELEN LOUISE KAISER, R.P.T., *Director and Assistant Professor of Physical Therapy.*
CORNELIA WATSON, B.S., *Occupational Therapist.*
BERT R. TITUS, *Supervisor, Prosthetics and Technical Associate in Orthosis and Prosthesis.*
ELON HENRY CLARK, *Medical Artist and Professor of Medical Art and Illustration.*
MARTHA J. SCOGGINS, *Executive Housekeeper.*
FLINTON CARDEN, *Supervisor, Printing Department.*
LEATRICE EMORY, *Supervisor, Electrocardiographic and Basal Metabolic Laboratory.*
PRESTON SMITH, *Supervisor, Private Medical Laboratory and Technical Associate in Laboratory Science.*
JOHN SESSOMS, *Manager, Laundry.*
GRETCHEN CHEEK, R.N., *Supervisor, Central Supply Services.*

- MARION BATCHELDER, R.N., *Supervisor, Operating Room Services.*
 C. RONALD STEPHEN, M.D., *Anesthesiologist and Professor of Anesthesia.*
 ROBERT J. REEVES, M.D., *Radiologist and Professor of Radiology.*
 DORIS NIFONG, R.N., *Director, Practical Nurse Education.*
 AARON P. SANDERS, M.D., *Director, Isotope Laboratories and Assistant Professor of Radiology and Biophysics.*
 IVAN W. BROWN, M.D., *Director, Blood Bank and Associate Professor of Surgery.*
 HAYWOOD M. TAYLOR, Ph.D., *Director, Biochemistry Laboratories and Medical Technology and Associate Professor of Biochemistry.*

Internships and Residencies

Straight internships of one year duration are available in Medicine, Surgery, Obstetrics-Gynecology, Pediatrics, Psychiatry and Pathology. Mixed internships are available in Obstetrics and Pediatrics. A stipend of \$25 per month is offered in Medicine, Surgery and Pediatrics plus room, board, laundry and uniforms. An allowance of \$12.50 is paid to married house officers in lieu of a room in the house staff quarters. Appointments are from July 1 through June 30, although special arrangements can be made with individual department heads.

Assistant Residencies and Residencies are available in the following services.

Anesthesiology.....	Ronald Stephen, M.D.
Endocrinology.....	Frank Engel, M.D.
Internal Medicine.....	(Chm.) Dr. E. A. Stead, Jr., M.D.
Allergy.....	Oscar Hansen-Prüss, M.D.
Cardiology.....	E. S. Orgain, M.D.
Dermatology.....	J. Lamar Callaway, M.D.
Gastroenterology.....	Julian Ruffin, M.D.
Hematology.....	Wayne Rundles, M.D.
Neurology.....	E. Charles Kunkle, M.D.
Pulmonary Disease.....	E. Menefee, M.D.
Neuropsychiatry.....	(Chm.) E. Busse, M.D.
Obstetrics & Gynecology.....	(Chm.) Bayard Carter, M.D.
Pathology.....	(Chm.) Wiley D. Forbus, M.D.
Pediatrics.....	(Chm.) Jerome Harris, M.D.
Radiology.....	(Chm.) Robert Reeves, M.D.
Surgery-General.....	(Chm.) Deryl Hart, M.D.
Neuro-Surgery.....	Barnes Woodhall, M.D.
Ophthalmology.....	Banks Anderson, M.D.
Oral Surgery.....	Nicholas Georgiade, M.D.
Orthopedics.....	Lenox D. Baker, M.D.
Otolaryngology.....	Watt Eagle, M.D.
Plastic Surgery.....	Kenneth Pickrell, M.D.
Thoracic Surgery.....	Will Sealy, M.D.
Urology.....	Edwin Alyea, M.D.
Dentistry.....	Norman Ross, D.D.S.

All Services are approved by the Council on Medical Education and Hospitals of the American Medical Association.

Application forms for all internships may be obtained by writing to the Superintendent, Duke Hospital, Durham, North Carolina. Graduates of any Class A medical school are eligible for internships.

Appointments are open to women and to graduates of accredited foreign medical schools. Duke Hospital participates in the National Intern Matching Program, Inc.

After completion of an internship in Duke Hospital or in another acceptable hospital, a certain number may be appointed as assistant residents in the above listed specialties plus Biochemistry, the Student Health Service or as fellows of the Private Diagnostic Clinics at a salary of \$250 to \$800 per year plus maintenance. A smaller number may be eventually promoted to the residency in the above listed services at an annual salary of \$500 to \$1300 per year plus maintenance. Application should be made to the head of the department concerned.

The Hospital and School of Medicine are an integral part of the Duke University campus, and its educational, recreational and athletic facilities are available for the Resident Staff.

The Veteran's Hospital opened on April 6, 1953 and located within walking distance of Duke Hospital, is integrated with the Duke Hospital house staff training program. House officers on certain services may be assigned to either hospital for parts of a year. Administratively, the hospitals are separate but educationally they are closely integrated. The Medical Staff of the Veteran's Hospital is supervised by a Dean's Committee composed of faculty members of the Duke School of Medicine. Certification of training is provided by Duke Hospital.

Postgraduate Study

Graduates in medicine are welcomed at the various specialty clinics in medicine, surgery, obstetrics and other specialties, which are held from 9:30 A.M. to 12:30 P.M. each morning except Sunday. Ward-rounds are given in medicine in the mornings, and general out-patient clinics are in session in the afternoons. Each Thursday morning more formal exercises are offered, and all practicing physicians are welcomed. These exercises begin at 9:30 A.M. with an amphitheatre clinic or a lecture in the various specialties, followed by a clinicopathological conference and ending with medical staff rounds. These three hours of instruction are designed for students, house staff and visiting physicians and have been approved for category I credit by the American Academy of General Practice. Physicians are urged to register at the Dean's Office each time they come so that proper credit may be given, and also they may obtain their guest tickets for lunch. In addition to these opportunities for study, short-term attendance in the various departments can be arranged. This consists of ward-rounds, attendance at lectures and demonstrations and visits and instructions in the out-patient clinics. Further information can be obtained from the Director of Postgraduate Education, Duke Hospital, or by writing directly

to the Chairman of the Department in which any physician desires to work.

Throughout the year, there are given concentrated postgraduate courses usually lasting two to four days. These range from special subjects to a general review. Anyone who wishes to be placed on the mailing list should communicate with the Director of Postgraduate Medical Education, Box 3088, Duke Hospital, Durham, N. C.

Paramedical Courses at Duke Hospital

Paramedical Coordinating Committee

KENNETH E. PENROD (Chairman), IVAN W. BROWN, JOHN CAHOON, LELIA CLARK,
NORMAN F. CONANT, PHILIP HANDLER, J. HARNED BUFKIN, HELEN KAISER, JOSEPH
E. MARKEE, LOUIS E. SWANSON, HAYWOOD M. TAYLOR.

Dietetics

ELSIE W. MARTIN, A.B., M.S., *Director and Professor of Dietetics.*

ERMA LEE ADAMS, B.S., C.P.A., *Accountant and Assistant Director.*

BARBARA C. CRANE, B.S., *Assistant Director, Charge of Food Production and Food Service.*

MARLENE BOND, B.S., M.S., *Clinic and Teaching Dietitian.*

MARIE BURKE, B.S., M.S., *Therapeutic and Teaching Dietitian.*

AUDREY M. EVANS, B.S., *Therapeutic and Teaching Dietitian.*

MARTHA SHELTON, B.S., *Instructor of Nutrition and Diet Therapy for Student Nurses.*

M. EUGENIA MALONE, B.S., *Administrative and Teaching Dietitian.*

MARGARET PRESLEY, B.S., *Administrative Ward Dietitian and Instructor.*

In addition to the dietetic training of the students of the Schools of Medicine and Nursing, fourteen dietetic interns may be admitted to the Program of Dietetics and given the certificate of graduate dietitian after the successful completion of one year's internship. The entrance requirements are a Bachelor's degree from an approved university or college, with majors in nutrition and institutional management, and the courses in chemistry, biology, social science, and education recommended by the American Dietetic Association. The course for dietetic interns provides instruction in all phases of hospital and institutional dietetics, including experience from the buying and storage of food to its service to the patients according to the physician's orders. Interns may apply some of their time in securing graduate credit.

The course starts the first of September. All students pay a registration fee of \$10 at the time of appointments. Additional fees are charged if the intern takes additional work in the University for an advanced credit. Maintenance is provided. More detailed information and application blanks may be obtained from the Professor of Dietetics, Duke University School of Dietetics, Durham, N. C.

Hospital Administration

STAFF

- F. ROSS PORTER, B.S., *Superintendent and Professor of Hospital Administration, Director.*
- LOUIS E. SWANSON, A.B., *Assistant Superintendent and Associate Professor of Hospital Administration.*
- CHARLES H. FRENZEL, A.B., *Assistant Superintendent and Associate Professor of Hospital Administration.*
- DEWITT WRIGHT, B.S., J.D., *Assistant Superintendent and Associate in Hospital Administration.*
- LEMUEL R. JORDAN, A.B., M.A., *Assistant Superintendent, Director of Clinic and Assistant Professor of Hospital Administration.*
- JOHN M. MCBRYDE, B.S., *Administrative Assistant.*
- RICHARD A. BINDENWALD, A.B., *Personnel Officer.*
- THEODORE W. MINAH, B.S., *Advisor in Food Service Administration.*
- CLARENCE H. COBB, Ph.G., *Manager Private Medical Clinics.*
- EDWARD S. RAPER, A.B., *Manager Private Surgical Clinics.*
- MARSHALL I. PICKENS, M.A., *Director Hospital and Orphans Section, The Duke Endowment, and Associate in Hospital Administration.*
- GEORGE P. HARRIS, A.B., *Field Director Hospital and Orphans Section, The Duke Endowment, and Instructor in Hospital Administration.*
- JAMES R. FELTS, JR., *Field Representative Hospital and Orphans Section, The Duke Endowment, and Instruction in Hospital Administration.*
- H. CARL ROWLAND, A.B., *Field Representative Hospital and Orphans Section, The Duke Endowment, and Instructor in Hospital Administration.*
- B. G. MCCALL, A.B., *Field Representative, Hospital and Orphans Section, The Duke Endowment, and Instructor in Hospital Administration.*
- JAMES GLOTFELTY, M.D., *Manager, Veterans Administration Hospital, Durham, and Assistant Professor of Hospital Administration.*

LECTURERS

- E. C. BRYSON, LL.B., *Associate Professor of Law, Duke University.*
- WATSON S. RANKIN, M.D., *Consultant, Hospital and Orphans Section, The Duke Endowment.*
- CHARLES E. PRALL, Ph.D., *Dean, School of Education, Woman's College, University of North Carolina.*
- G. C. HENRICKSEN, C.P.A., *Comptroller, Duke University.*
- A. S. BROWER, A.B., *Treasurer, Duke University.*
- RUSSELL L. DICKS, A.B., B.D., D.D., *Associate Professor Pastoral Care, Duke University.*
- E. G. MCGAVRAN, M.D., M.P.H., *Dean, School of Public Health, University of North Carolina.*
- CHARLES P. CARDWELL, B.S., *Director, Medical College of Virginia Hospital.*
- JOSEPH E. BARNES, M.H.A., *Director, Rex Hospital.*
- J. LYMAN MELVIN, *Administrator, Park View Hospital.*
- JACQUE NORMAN, A.B., A.I.A., *Hospital Consultant.*
- SAMPLE B. FORBUS, A.B., *Director, Watts Hospital.*
- J. MINETREE PYNE, B.S., *Administrator, Alamance County Hospital.*
- WILLIAM M. RICH, A.B., *Administrator, Lincoln Hospital.*

ADMINISTRATIVE RESIDENTS

- FRED N. CRAWFORD, JR., B.S.
- DAVID P. HENSY, A.B.

LEON HISLE, A.B.
WILLIAM LANGLEY, B.S.
ROBERT NORDHAM, A.B.
JAMES A. WARDEN, A.B.
BERNIE B. WILCH, A.B.
ROGER WHITE, B.A.

Eight internships in hospital administration leading to a certificate are available to university graduates whose character, tact, and ability for leadership are good, and whose academic standing is high. These internships are of two years' duration and pay a small salary in addition to room, board, and laundry. Vacations of two weeks are allowed during each year of internship.

The instruction is practical rather than theoretical in emphasis. The interns are rotated through seven different assistant administrative positions in the Hospital. There is also a weekly seminar lasting two hours and two classes lasting one hour each during the week.

The interns may register in the Graduate School of Duke University, and receive the A.M. degree after the successful completion of a thesis and twenty-four semester hours of university courses in various fields. This additional work will add one year to the program. Further information may be obtained by writing to the Superintendent, Duke Hospital, Durham, N. C.

Medical Art and Illustration

ELON H. CLARK, *Professor of Medical Art and Illustration.*
ROBERT L. BLAKE, *Associate in Medical Art and Illustration.*
HENRY F. PICKETT, *Associate in Medical Art and Illustration.*
RAYMOND HOWARD, *Instructor in Medical Photography.*
A. C. WEBSTER, *Instructor in Medical Photography.*
THURMAN ELLIS, *Assistant Photographer.*
LIBBY HAYES, *Letter Artist.*
PAUL FAIRCHILD, *Medical Artist.*

The function of this Division is to produce, for staff members allied to medicine, visual aids by way of various art and photographic methods. These visual aids are used to enhance the medical records and to aid in research and education. Services offered by this Division are: 1. Medical Art: Illustrations, by means of various artistic techniques, depicting anything perceptible to the eye, the existing but unseen and even the theoretical, as well as mechanical drawings, diagram, charts, graphs, lettering, casts, models, exhibits, etc. 2. Medical Photography: Illustrations of anything to which available photographic equipment will respond. This Division produces still and motion pictures, microphotographs, pictures of the retinae, photographic copies, film strips, lantern slides, enlargements and contact prints. Services offered directly for the patient's benefit are: Production of various types of

anatomical prostheses and instruction in the use of opaque cosmetics. Facilities for individual training in specific techniques or methods employed by this Division are available. No academic credit is given. Prerequisites, tuition, time and type of training are determined by the Chairman of this Division. No regular courses of instruction in medical art and photography or their allied fields are offered.

Medical Record Library

J. HARNED BUFKIN, R.N., C.R.L., *Assistant Professor of Medical Record Library Science.*

BETTY S. WIGGINS KERNODLE, A.B., R.R.L., *Assistant Medical Record Librarian.*

A twelve months' course for the training of medical record librarians which has been given full approval of the American Association of Medical Record Librarians and the American Medical Association, includes three months of classes and nine months of internship with rotation through inter- and extra-departmental stations. Applicants are judged individually for eligibility, and education, training, and experience are all taken into consideration. The curriculum provides instruction in the theory of medical record library science, and an introduction to anatomy, physiology, pathology, medical and operative terminology, and medical diction. Instruction is given by members of the faculty of the School of Medicine, with special lectures on hospital management and correlation of various hospital departments, as well as seminars on legal aspects and administrative uses of medical case records. Internship includes application of class work in actual practice and covers all phases of medical record library work. The course starts in October. The tuition fee is \$175.00 and does not include maintenance. A certificate is awarded upon successful completion of the course. Applications may be made to the Medical Record Librarian, Box 3307, Duke Hospital, Durham, N. C.

Medical Technology

HAYWOOD M. TAYLOR, Ph.D., *Professor of Toxicology and Associate Professor of Biochemistry (Director).*

GEORGE MARGOLIS, M.D., *Associate Professor of Pathology (Associate Director of Laboratory Technique).*

DAVID T. SMITH, M.D., *James B. Duke Professor of Bacteriology and Associate Professor of Medicine.*

OSCAR C. E. HANSEN-PRÜSS, M.D., *Professor of Medicine in Charge of Clinical Microscopy.*

DUNCAN C. HETHERINGTON, Ph.D., M.D., *Professor of Anatomy.*

NORMAN F. CONANT, Ph.D., *Professor of Mycology and Associate Professor of Bacteriology.*

R. WAYNE RUNDLES, M.D., *Associate Professor of Medicine.*

HILDA POPE, Ph.D., *Assistant Professor of Bacteriology.*

MARY A. POSTON, A.M., *Associate in Bacteriology.*

HOYLE W. CRAIG, *Technical Associate in Bacteriology.*
 PRESTON W. SMITH, *Technical Associate in Hematology.*
 LEO B. DANIELS, *Technical Associate in Biochemistry.*

The course in laboratory technique, which includes training in blood chemistry, clinical microscopy, bacteriology, serology, basal metabolism, etc., is approved by the Board of Schools of Medical Technology of the American Society of Clinical Pathologists. The course lasts twenty-one months, the next class beginning September, 1957. The registration fee is \$300 which includes tuition, student health and diploma fee for the entire course. There are no additional fees except for breakage. Other student activity fees are optional. The students live in town at their own expense. A minimum of two years of approved college work is required. The degree of B.S. in Medical Technology is awarded upon successful completion of the course. Information as to the specific requirements may be obtained from Dr. Haywood M. Taylor, Duke Hospital, Durham, North Carolina.

Nurse Anesthesia

CHARLES RONALD STEPHEN, M.D.C.M., D.A., *Professor of Anesthesiology and Chief of Division of Anesthesiology.*

MARY B. CAMPBELL, R.N., M.A.A.N.A., *Instructor in Nurse Anesthesia and Chief Nurse Anesthetist.*

EVELYN E. AULD, R.N., M.A.A.N.A., *Instructor in Nurse Anesthesia and Chief Nurse Anesthetist, Watts Hospital, Durham, N. C.*

MARY M. HIERS, R.N., M.A.A.N.A., *Educational Program Director.*

MARTHA BROWN, R.N., M.A.A.N.A., *Assistant Nurse Anesthetist.*

LOLA A. GLENN, R.N., M.A.A.N.A., *Assistant Nurse Anesthetist.*

EMILY S. KIRKLAND, R.N., M.A.A.N.A., *Assistant Nurse Anesthetist.*

FRANCES ROWLAND PERRY, R.N., M.A.A.N.A., *Assistant Nurse Anesthetist.*

BEVERLY ANN WHITE, R.N., M.A.A.N.A., *Assistant Nurse Anesthetist.*

Courses available to graduate nurses include an eighteen months' course for nurses who have had no experience in anesthesia, and a nine to twelve months' course for nurses who have had five years of practical experience but no formal training in the specialty. Instruction embraces the theoretical aspects and clinical application of all drugs and techniques in accepted usage. The program is divided into quarters. The major part of the basic theoretical instruction is given during the first three quarters. After a pre-clinical period of eight weeks, clinical practice runs parallel with the theoretical program. One class is accepted annually and enrolled on January 15. All appointments for the current year are made by September 1 of the preceding year. Graduates of these courses are eligible to take the examination given by the American Association of Nurse Anesthetists. Tuition is \$150.00 and \$100.00 respectively. Additional information concerning these programs for nurses may be obtained from Mary B. Campbell, R.N., Box 3094, Duke Hospital, Durham, North Carolina.

Nursing

ANN M. JACOBANSKY, R.N., M.Ed., *Dean of the School of Nursing.*

ELIZABETH MOSES, R.N., M.Ed., *Assistant to the Dean, Director of Undergraduate Instruction.*

LELIA R. CLARK, R.N., M.A., *Director of Nursing Service.*

DORIS NIFONG, *Coordinating Instructor of Practical Nursing Division.*

School of Nursing. The program offered in the undergraduate school of nursing leads to the degree of Bachelor of Science in Nursing after four years of study. Further information concerning the School of Nursing may be obtained by writing to the Dean of the School of Nursing, Hanes House, Duke University, Durham, North Carolina.

Practical Nursing Division of the Vocational Education Department of the Durham City Schools, Duke Unit. After three months of classroom instruction at the Hillside High School, nine months are spent in classes and practical training at Duke Hospital. At the completion of this course, the student receives a certificate in practical nursing and is eligible for licensure as a practical nurse in North Carolina.

Occupational Therapy

CORNELIA ANNE WATSON, O.T.R., *Instructor in Occupational Therapy and Director of Department.*

JOYCE ANNE DeMOOR, O.T.R., *Assistant in Occupational Therapy.*

CAROL DARLENE BILLOW, O.T., *Assistant in Occupational Therapy.*

Occupational Therapy is available to any patient during his hospitalization, or as an out-patient, following referral by his physician. Occupational Therapy assists in teaching and consulting physical therapy, nursing, and medical students in the pertinent aspects of occupational therapy.

None of the academic course work leading to Registration in occupational therapy is offered in the Department. However, occupational therapy students from accredited schools receive their 2 months general medical and surgical affiliation at Duke.

Further information may be obtained from the Division of Occupational Therapy, Duke Hospital, Durham, N. C.

Physical Therapy

HELEN LOUISE KAISER, R.P.T., *Assistant Professor of Physical Therapy, Physical Therapy Director.*

GRACE CUNNINGHAM HORTON, R.P.T., *Assistant in Physical Therapy.*

ELEANOR M. FLANAGAN, R.P.T., *Assistant in Physical Therapy.*

ROSEMARY LANE, M.C.S.P.,* *Research Associate in Physical Therapy.*

* Member of the Chartered Society of Physiotherapy of England.

MABEL PARKER, R.P.T., *Assistant in Physical Therapy.*

CONSTANCE WARREN PEAKE, R.P.T., *Assistant in Physical Therapy.*

MARTHA FREEMAN BREWER, R.P.T., *Assistant in Physical Therapy.*

JENELL A. SMITH, R.P.T., *Assistant in Physical Therapy.*

HELEN M. TILGHMAN, M.C.S.P.,* *Assistant in Physical Therapy.*

EDNA BLUMENTHAL, R.P.T., *Lecturer in Physical Therapy.*

LUCY STRAW, R.P.T., *Lecturer in Physical Therapy.*

Beginning in October, a fifteen months' approved course in physical therapy is offered for men and women graduates of accredited colleges who can meet the following requirements:

Biological Sciences (excluding Botany).....	8 semester hours
Physics	4 semester hours
Chemistry	4 semester hours
Psychology	6 semester hours
Mathematics including Trigonometry	

Selected applicants who have completed ninety college semester hours including the above science prerequisites may also be considered. Enrollment is limited to 24 students.

The curriculum provides instruction in anatomy, physiology, pathology, kinesiology, personality and physical handicap, the use of physical agents and assistive devices, tests and measurements, therapeutic exercise, physical therapy in clinical medicine and rehabilitation. Clinical subjects are taught by members of the faculty of the School of Medicine. Clinical experience is provided under the direction of qualified physical therapists at Duke Hospital and affiliating institutions. This course starts in October. The tuition fee is \$450 plus \$35 for medical fee, and does not include maintenance. A certificate is awarded upon successful completion of the course, which qualifies students for membership in the American Physical Therapy Association and to take national and state registry and licensing examinations.

A total credit of 20 hours, allocated as follows, may be applied toward a baccalaureate degree provided the student can meet the University requirements: Medical Science, M109 (Anatomy), 8 s.h.; Medical Science M203 (Physiology), 6 s.h.; Psychology S232, 3 s.h.; Kinesiology 116, 3 s.h.

Further information and application blanks may be obtained from the Division of Physical Therapy, Box 3403, Duke Hospital, Durham, North Carolina.

Prosthetic and Orthopedic Appliances

BERT R. TITUS, C.P., C.O., *Technical Associate in Orthosis and Prosthesis and Director of Department.*

J. D. FERGUSON, C.O., *Assistant Orthotist.*

ROBERT O. GOOCH, *Assistant Prosthetist.*

* Member of the Chartered Society of New Zealand.

The function of this department is to produce for the medical profession prosthesis and orthopedic appliances. Facilities for individual training in specific techniques or methods employed by this department are available. At the completion of four years' training you are eligible to take the examination of American Board of Certification.

Social Service

JANET WIEN, M.S., *Director and Assistant Professor of Social Service.*

SARA HARRIETTE AMEY, A.B., *Instructor in Social Service.*

MARY H. BROWN, M.S.W., *Instructor in Social Service.*

MERLE M. FOECKLER, M.S., *Instructor in Social Service.*

HELEN LEWIS, M.S., *Instructor in Social Service.*

LENNIE-MARIE MUSE, A.M., *Instructor in Social Service.*

ISABEL PELTON, M.S., *Instructor in Social Service.*

RUTH F. PITTMAN, M.S.W., *Instructor in Social Service.*

MARY VIRGINIA RIGSBEE, M.S.W., *Instructor in Social Service.*

ANNABEL STANFORD, M.S., *Instructor in Social Service.*

MADGE MARIE AYCOCK, M.S.S., *Special Instructor in Social Service.*

RUTH B. WATSON, M.S., *Research Associate in Social Service.*

Medical and psychiatric social case work service is available to all patients who have social, inter-personal or emotional problems related to their illness.

The Department assists in teaching the students of the Schools of Medicine and Nursing the social aspects of illness, community resources and the function of the caseworker through scheduled classes, consultation and demonstration. In addition, the Department serves as an agency for supervised field work for students of the Graduate School of Social Work of the University of North Carolina and Atlanta University School of Social Work. Further information concerning training for advanced students may be obtained from the Social Service Department, Duke Hospital, Durham, North Carolina.

X-Ray Technology

ROBERT J. REEVES, M.D., *Professor of Radiology and Chairman of the Department.*

GEORGE J. BAYLIN, M.D., *Professor of Radiology and Associate in Anatomy.*

WADE H. SHUFORD, M.D., *Associate Professor in Radiology.*

JOHN B. CAHOON, R.T., F.A.S.X.T., *Technical Associate in Radiology.*

WILEY R. TICE, R.T., A.S.X.T., *Technical Assistant in Radiology.*

EARL LEE PERRY, R.T., A.S.X.T., *Technical Assistant in Radiology.*

The course in x-ray technology offers to qualified students a one-year training program in radiographic and x-ray therapy technic. Students are given thorough instruction in the technical aspects of radiography. They are also given instructions in assisting radiologist in

x-ray and radium therapy and in the handling of radio-isotopes. Courses in anatomy, physiology, darkroom chemistry and procedures, fundamentals of radiographic exposure, positioning of patients, general and special techniques, general and radiographic physics and medical terminology are conducted by registered technician instructors with the assistance of radiologists and other physicians on the staff of the Hospital. The course is approved by the Council on Medical Education of the American Medical Association, The American Registry of X-ray Technicians and The American Society of X-ray Technicians. Students are admitted in September and February. Applications should be filed by June 1 for the September class and October 1 for the February class. Candidates for admission must be between the ages of 18 to 25, and graduates of approved high schools. Each class is limited to approximately seven students. Applicants should rank in the upper third of their class. A personal interview is required of each prospective student. No maintenance is provided by the Hospital, therefore students live in town at their own expense. A certificate is awarded to those who successfully complete the course. All applications and requests for further information should be addressed to: Professor of Radiology, Duke Hospital, Durham, N. C.

Roster of Students

FIRST-YEAR CLASS (CLASS OF 1960)

Baker, Linny Marshall (Davidson College), Kannapolis, N. C.
 Bird, Warren Phillip (Cornell University, Georgetown University), Greensboro, N. C.
 Blount, Robert Estes, Jr. (Millsaps College), Washington, D. C.
 Bradshaw, Preston Hatcher, Jr. (Wake Forest College), Rocky Mount, N. C.
 Brice, Robert Samuel, Jr. (Duke University), Gastonia, N. C.
 Brickman, Thayer Ellis (Duke University), Boston, Mass.
 Brumley, George, Jr. (Duke University), St. Marys, Ga.
 Campell, Henry Simon (Emory University), Greenville, S. C.
 Cassells, Joseph Samuel (Duke University), Chester, S. C.
 Chamblee, Hubert Royster, Jr. (Davidson College), Raleigh, N. C.
 Chapman William Ennis, III (Duke University, Ohio State University), York, Pa.
 Collins, William Stuart (Davidson College), Chase City, Va.
 Cooper, William Cornelius (Union College, Duke University), Rocky Mount, N. C.
 Cousar, George Richard, Jr. (Davidson College), Belgian Congo
 Crymes, James Elbert, III (Duke University), Miami, Fla.
 Dalton, Franklin Palmer (Duke University, Virginia Military Institute), Charlotte, N. C.
 Davis, James Karnes (University of Arizona, Duke University), Rainelle, W. Va.
 Denby, John Lambert (Yale University, Washington University), Carlinville, Ill.
 Dobbs, Charles Edward (Washington and Lee University), Charlston, W. Va.
 Duvoisin, Peter Marc (Duke University), Clearwater Beach, Fla.
 Dyke, Peter Cummins (Yale University), Urbana, Ill.
 Eyster, Mary Elaine (Duke University), York, Pa.
 Fischer, Robert Wallace (Duke University), Cincinnati, Ohio
 Fore, William Whately (Duke University), Lynchburg, Va.
 Fort, Lynn, III (Duke University, Tulane University), W. Palm Beach, Fla.
 Garcia, Edgardo Arturo (Duke University, University of Puerto Rico), Hato Rey, P. R.
 Glasscock, Richard James (University of Arizona), Tel Aviv, Israel
 Goode, George Browne, Jr. (University of North Carolina), Hickory, N. C.
 Green, Robert (Duke University), Palm Beach, Fla.
 Grode, Harvey Eliot (Dartmouth College), E. Rockaway, N. Y.
 Hubbard, William Henry (University of Florida), Jacksonville, Fla.
 Huggin, Perry Jane (University of Tennessee), Knoxville, Tenn.
 LeBauer, Edmund Joseph (Duke University), Greensboro, N. C.
 Lee, James Fletcher (University of Tennessee), Murfreesboro, Tenn.
 Lewis, Andrew Morris, Jr. (Duke University), Cheriton, Va.
 Lodmell, John Gary (Stanford University, Duke University), Washington, D. C.
 Love, John Steven (Harvard University, Ohio State University), Rochester, N. Y.
 Malone, John Hugh, Jr. (Davidson College), Charlotte, N. C.
 Martin, Arthur Morrison, Jr. (Davidson College), Columbia, S. C.
 Massie, Francis Stanford (Duke University), Waynesville, N. C.
 Mayer, Walter Brem, Jr. (Princeton University), Charlotte, N. C.
 McLeod, Alexander Canaday (Princeton University), Southern Pines, N. C.
 Menefee, William Page (Virginia Military Institute), Washington, D. C.
 Meriney, David Knight (Duke University), Ramsey, N. J.
 Merrell, Robert Alston, Jr. (The Citadel), Daytona Beach, Fla.
 McLeod, Michael Eugene (University of Florida), Ft. Pierce, Fla.
 Opyke, John Linford, Jr. (Rollins College), Flemington, N. J.
 O'Shaughnessy, Patrick Jerome (Utah State University, Duke University), Durham, N. C.
 Parkerson, Walter Tuck (Duke University), Charlotte, N. C.
 Parrott, Lawrence Huitt (Davidson College), Charlotte, N. C.
 Pearce, Philip Henderson (Furman University), Gaffney, S. C.
 Pilliod, James Phillips (Yale University), Topsham, Me.
 Preston, Edwin Thornton (Duke University), Kingsport, Tenn.
 Price, Grady Edwin (Duke University), Charlotte, N. C.
 Reece, Richard Lee (Duke University), Oak Ridge, Tenn.
 Richardson, Charles Clifton (Duke University), Columbia, S. C.
 Riggins, Richard Stafford (Duke University), Lake Worth, Fla.
 Rineberg, Bernard Allen (Duke University, Columbia University), New Brunswick, N. J.
 Robertson, Lloyd Harvey, Jr. (Davidson College, Guilford College), Salisbury, N. C.
 Rockwell, William James Kenneth (Washington and Lee University, University of North Carolina), Asheville, N. C.
 Sadler, John Holland (Duke University), Donalds, S. C.
 Scarpelli, Emile Michael (Fordham University, Duke University), New York, N. Y.
 Schwarz, George Carl (Duke University), Springfield, N. J.
 Seabury, James Congdon (Davidson College, University of Virginia), Silver Spring, Md.
 Smith, Edward Hardin, Jr. (Duke University), Clover, S. C.
 Smith, Donald Dewey (Duke University), Orlando, Fla.

Stuart, Frank Allan, III (Duke University, University of Colorado), Tulsa, Okla.
 Triggiani, Leonard Vincent (Drew University, Catholic University), Paterson, N. J.
 Tully, Harry Thurman, Jr. (Washington and Lee University, University of Louisville), Louisville, Ky.
 Vause, David Dwight (Duke University), Rutherfordton, N. C.
 Walker, Joseph Edwards (Duke University, Guilford College), Ellenboro, N. C.
 Walker, Lawrence Crumpler, Jr. (University of North Carolina), Mt. Airy, N. C.
 Weber, Carl Harold, Jr. (Duke University), Gastonia, N. C.
 Westfall, Harry Lake, Jr. (Virginia Military Institute, William and Mary), Portsmouth, Va.
 Weston, William, III (University of South Carolina), Columbia, S. C.
 Woodward, Sue Eggleston (Duke University), Suffolk, Va.
 Young, James Sanford (Washington and Lee University, Duke University), Washington, D. C.

SECOND-YEAR CLASS (CLASS OF 1959)

Agre, Karl (Villanova University, Hahnemann Medical College), Great Neck, N. Y.
 Albertson, Thomas Howard (Duke University), High Point, N. C.
 Alexander, Clyde Vinson, Jr. (Duke University), Milan, Tenn.
 Baker, Horace Powell, Jr. (University of Alabama), Tuscaloosa, Ala.
 Bean, Richard Louis (Wake Forest College), Warren, Pa.
 Boineau, John Pope, Jr. (University of South Carolina), Columbia, S. C.
 Bowen, Edward Gene (Duke University), Lakeland, Fla.
 Brewer, James Chester (Guilford College), Guilford, N. C.
 Brooks, David William, Jr. (Harvard University), Atlanta, Ga.
 Chandler, Arthur Cecil, Jr. (Washington & Lee, Florida Southern), Charleston, W. Va.
 Clemmons, Roy Seawell (Guilford College, Duke University, Columbia University), Greensboro, N. C.
 Clontz, John Milton (Duke University), Fayetteville, N. C.
 Cohen, Leon (University of California, New York University), Bronx, N. Y.
 Cooper, Tim Ervin, Jr. (Davidson College), Charlotte, N. C.
 Courie, Maurice Nickola (Duke University), Kinston, N. C.
 Engstrom, George Alfred (University of Florida), St. Petersburg, Fla.
 Evans, John Harold (Yale University), New Orleans, La.
 Fischberg, Bruce (University of Chicago, Columbia University), New York, N. Y.
 Forline, John William (Dartmouth University), Reidsville, N. C.
 Gaddy, Robert E., Jr. (Wake Forest College), Raleigh, N. C.
 Gaskin, John Stover, Jr. (University of North Carolina), Albemarle, N. C.
 Gibbs, Robert Harrison (Duke University), Statesville, N. C.
 Gills, James Pitzer (Virginia Polytechnic Institute), Bluefield, W. Va.
 Glover, John Snow (Citadel, University of North Carolina), Charlotte, N. C.
 Gregory, Miles Cunningham (University of North Carolina), Halifax, N. C.
 Gross, Lillian (Barnard College, University of Lausanne Medical School), Brooklyn, N. Y.
 Harrell, Ruth Flihn (Duke University), Norfolk, Va.
 Harrison, Howard Courtenay (Duke University), Danville, Va.
 Hayes, Charles Patton, Jr. (Duke University), Danville, Ill.
 Hendry, Wilson Seibert (Davidson College), Perry, Fla.
 Hensler, Patricia Louise (Duke University), Woodmere, N. Y.
 Higgins, James Thomas, Jr. (Duke University), Greenville, S. C.
 Hildebrandt, Richard John (The Citadel), Ft. Lauderdale, Fla.
 Hirschfeld, Robert Lewis (Duke University), Hartford, Conn.
 Hoffmann, James Russell (Duke University, Trinity College), W. Hartford, Conn.
 Jacobs, Daniel Murray (University of Florida), Daytona Beach, Fla.
 Johnston, William Webb (Davidson College), Mount Holly, N. C.
 Kenan, Patrick Dann (University of Oklahoma), Okmulgee, Okla.
 Kuhns, James Gregory (Princeton University), Silver Spring, Md.
 Lane, John Haden (Virginia Polytechnic Institute), Alta Vista, Va.
 Lindquist, Richard Kurt (Union College, Duke University), Albany, N. Y.
 Litch, Melvin, Jr. (N. C. State College, University of North Carolina), Greensboro, N. C.
 Mauney, Frank Maxton, Jr. (The Citadel), Gastonia, N. C.
 McCutcheon, Ernest Parrish (Davidson College), Greensboro, N. C.
 McFall, Frederick D. (Rollins College, University of North Carolina), Greensboro, N. C.
 Moles, Stanley S. (Duke University), Dunbar, W. Va.
 Moore, Marcus McDuffie (The Citadel), Daytona Beach, Fla.
 Mulholland, John Henry (U. S. Naval Academy, University of Virginia), Charlottesville, Va.
 Myers, Alonzo Harrison, Jr. (Duke University), Charlotte, N. C.
 Nance, Charles Lee, Jr. (Duke University), Charlotte, N. C.
 Nesmith, Marsh Arthur, Jr. (University of Florida), Plant City, Fla.
 Norton, Barry Parker (The Citadel), Mt. Dora, Fla.
 Nowlin, John Burton (Duke University), Charlotte, N. C.
 Pence, James Jerome, Jr. (University of North Carolina), Wagram, N. C.
 Perlstein, Ruth Natalie (Oberlin College), Chicago, Ill.
 Reed, George B., Jr. (Stanford University), Watsonville, Calif.
 Rippy, William David (Furman University), Greenville, S. C.
 Robbins, Thomas Waters, Jr. (Washington & Lee University), Princeton, N. J.
 Rooker, Donald White (Duke University), Rocky Mount, N. C.
 Starr, Wilson Clayton (Davidson College), Huntington, W. Va.
 Tabari, Kamuzia (University of California, Bethany College), Tehran, Iran
 Thompson, Frank Brown (University of Florida), Miami, Fla.
 Tindall, John Philip (Duke University), Kissimmee, Fla.
 Tope, Stephen Lindsey, Jr. (Duke University), Tampa, Fla.

Tweed, Clyde Gilbert (University of North Carolina), Asheville, N. C.
 Vieth, Roger Gordon (Duke University), Westmont, Ill.
 Wallace, Donald Kai (Wake Forest College), Durham, N. C.
 Wallace, Andrew Grover (Duke University), Columbus, Ohio
 Whately, Joseph William, Jr. (University of North Carolina, Duke University),
 Durham, N. C.
 White, James File (University of South Carolina), Columbia, S. C.
 White, Thomas Hugh, Jr. (Williams College), Manhasset, N. Y.
 Wilkinson, Harold Arthur (Campbell Jr. College, Wake Forest College), Wake Forest, N. C.
 Williams, McKim (Harvard University), Baltimore, Md.
 Wood, Roy Stanley (Duke University), Jacksonville, Fla.
 Yongue, Alfred Harris (The Citadel), Washington, D. C.
 Young, David Michael (Duke University), Bluffton, Indiana

THIRD-YEAR CLASS (CLASS OF 1958)

Allen, Irving Ellis, Jr. (Duke University), Durham, N. C.
 Altman, Robert Sherwood (University of Florida), Miami, Fla.
 Anderson, Edward Everett (Duke University), Durham, N. C.
 Asadi, Abdul-Aziz Murtadha (Utah State College, University of Utah), Kadhimiyyeh, Iraq
 Barnhardt, Luther Ernest, Jr. (Duke University), Concord, N. C.
 Bell, John Henry (Duke University), High Point, N. C.
 Berry, Roger (New York University), New York, N. Y.
 Bingman, Kenneth Ronald (Duke University), Bridgeport, W. Va.
 Borders, Donald D. (University of Colorado), Stratton, Colorado.
 Brandt, Robert John (Harvard University), Whitinsville, Mass.
 Bryant, Wm. Franklin, Jr. (Duke University), Charlotte, N. C.
 Byers, Frank Matthew, Jr. (Duke University), St. Petersburg, Fla.
 Cassady, George Edward, II (La Sierra College, University of Southern California),
 Los Angeles, Cal.
 Chambers, Robert Tillman (Duke University), Rowland, N. C.
 Cheshire, McKinley, Jr. (Heidelberg University Faculty of Medicine), Wilmington, N. C.
 Christian, Charles Donald (University of Kansas, Duke University), Durham, N. C.
 Christie, John Norton, Jr. (Duke University), Jacksonville, Fla.
 Dixon, John Elliott (Duke University), Ayden, N. C.
 Dunn, John Thornton (Princeton University), Arlington, Va.
 Evans, Jack Craver (Duke University), Lexington, N. C.
 Evans, John Steed (Virginia Military Institute), Murfreesboro, N. C.
 Fraumeni, Joseph Francis, Jr. (Harvard University, Tufts University Medical School), North
 Reading, Mass.
 Furth, John Jacob (Cornell University, Yale University School of Law, University of
 Tennessee), Lexington, N. C.
 Garcia, Gould Coates (Florida State University), Daytona Beach, Fla.
 Garcia-Trias, David Enrique (Johns Hopkins University), Hato Rey, Puerto Rico.
 Goldberg, Donald (Duke University), Bronx, N. Y.
 Graham, Thomas Caston (Duke University), Newnan, Ga.
 Griffin, Ashton Thomas, III (Duke University), Goldsboro, N. C.
 Grodsky, Leonard Herbert (University of North Carolina), Durham, N. C.
 Grunert, Donald Herman (The Citadel), Swannanoa, N. C.
 Guin, Thomas Duvall (Wake Forest College), Erwin, N. C.
 Handy, John Rutherford (Virginia Military Institute), Richmond, Va.
 Harris, Barry Conway (Duke University), Cresson, Pa.
 Hartsell, Charles Jacob, Jr. (Pfeffer Junior College, University of North Carolina),
 Oakboro, N. C.
 Heine, M. Wayne (University of Florida), Ocala, Fla.
 Hernandez, Rafael Ricardo (Duke University), Santurce, Puerto Rico.
 Howell, Talmadge Rudolph (Wake Forest College), Pikeville, N. C.
 Howerton, Philip Thomas (Davidson College), Charlotte, N. C.
 Hurlburt, James Cole (Duke University), Salem, Ohio.
 Ingalls, Jerry Milton (Macalester College), Rockingham, N. C.
 Johnson, Albin Willard (Duke University), Arlington, Va.
 Johnson, Herbert Fraser (Duke University), Tampa, Fla.
 Johnson, James Alfred (The Citadel), High Point, N. C.
 Jones, Billy Ernest (The Citadel), Port Orange, Fla.
 Jones, David Randolph (Davidson College), Durham, N. C.
 King, Elizabeth Hicks Hart (Duke University), Durham, N. C.
 Kirkland, Thomas Alexander, Jr. (The Citadel), Charleston, S. C.
 Laughlin, Edward Humes (University of Virginia), Huntsville, Ala.
 Lee, James Mobley (Duke University), Birmingham, Ala.
 Lee, John Everett (Princeton University), Charlotte, N. C.
 Lewis, William Ralph, Jr. (University of North Carolina, University of South Carolina),
 Columbia, S. C.
 Mahaley, Moses Stephen, Jr. (Charlotte College, Wake Forest College), Charlotte, N. C.
 Mallory, James Davis, Jr. (Princeton University), Anniston, Ala.
 Markee, Shirley June (Duke University), Durham, N. C.
 Mason, Dean Towle (Duke University), Bethesda, Md.
 McCracken, Clayton Houston, Jr. (Duke University), Asheville, N. C.
 Milam, John Holloway (Swarthmore College, University of North Carolina), New York, N. Y.
 Mitchell, Calvin Harrison (University of Tampa, University of Florida), Tampa, Fla.
 Moore, Irwin Bernard (Johns Hopkins University), Miami, Fla.
 Morris, James Oscar, Jr. (Guilford College, University of North Carolina), Greensboro, N. C.
 Olsen, Roberta Louise (Bryn Mawr College), Durham, N. C.

Paisner, Allen Seth (Hebrew University, Hadassa Medical School), Woodside, N. Y.
 Phillips, Ran Lorenzo, II (Virginia Military Institute), Sterlington, La.
 Pillow, Virginia Queen (Duke University), Eggertsville, N. Y.
 Porter, George H., III (Duke University), Atlanta, Ga.
 Rackley, Charles Edward (Duke University), Independence, Va.
 Rollins, Hal Judd, Jr. (University of North Carolina), Rockingham, N. C.
 Satterwhite, William Madison, Jr. (Wake Forest College), Wake Forest, N. C.
 Scheil, Charles Philip (Duke University), Jersey City, N. J.
 Shofer, Robert Jay (University of Pennsylvania), Baltimore, Md.
 Smiley, Douglas Frederick (Duke University), Los Angeles, Cal.
 Spanel, David Louis (Princeton University, University of Pennsylvania), Princeton, N. J.
 Strader, Hunter Gordon, Jr. (Davidson College), Burlington, N. C.
 Thorne, Lawrence George (Duke University), Beckley, W. Va.
 Thorne, Norman Alan (North Carolina State College, Duke University), Ahsoskie, N. C.
 Tucker, Daniel Noe, Jr. (Duke University), Wilmington, N. C.
 Tucker, Donald Hugh (Duke University), Greenville, N. C.
 Warner, Charles Ernest (University of Florida), Daytona Beach, Fla.
 Weaver, William Travis (West Virginia University Medical School), Welch, W. Va.
 Wergeland, Floyd Lawrence, Jr. (Montgomery Junior College, University of Maryland), Chevy Chase, Md.
 West, Edward Talmadge, Jr. (Davidson College, East Tennessee State College), Johnson City, Tenn.
 White, Allyn Waverly, Jr. (Duke University), Pensacola, Fla.
 Wilson, Norman Jay (Duke University), Philadelphia, Pa.

FOURTH-YEAR CLASS (CLASS OF 1957)

Anderson, Herbert Charles (Massachusetts Institute of Technology, Hofstra College, Dartmouth College, University of Miami), Coral Gables, Fla.
 Andrews, Billy Franklin (Wake Forest College), Graham, N. C.
 Bacon, George Edgar (Wesleyan University), Scarsdale, N. Y.
 Barnhill, Lamuel Edgar, Jr. (Duke University), Bethel, N. C.
 Barrick, Harry Welling, Jr. (Princeton University, Trinity College, San Antonio, Duke University), Watsonville, Cal.
 Bedell, Richard Ferrandou (Duke University), Scarsdale, N. Y.
 Blackard, William Griffith (Duke University), Asheville, N. C.
 Bowles, Lawrence Thompson (Duke University), Garden City, N. Y.
 Bressler, Rubin (McGill University, Harvard University), Bronx, N. Y.
 Bromberg, Albert Marvin (College of William and Mary), Jersey City, N. J.
 Bunn, Joseph Plummer (Duke University), Tarboro, N. C.
 Cannon, Stanley Joel (Duke University), Coral Gables, Fla.
 Creighton, James Burns, Jr. (University of Florida), Tampa, Fla.
 Dulin, Thomas Leroy (Duke University), Charlotte, N. C.
 Elder, Thomas David (Duke University), Scotia, N. Y.
 Ellington, Robert Norwood (University of North Carolina), Burlington, N. C.
 Fennell, Thomas Dudley Boggs (Harvard University, University of Miami), Homestead, Fla.
 Fisher, Elbert Luther, Jr. (Duke University), Durham, N. C.
 Freedy, Lucy Rawlings (Wake Forest College, Wingate Junior College, University of Southern California), Conway, N. C.
 Fulton, James Walker (Duke University), Leesburg, Va.
 Gibson, Thomas Guthrie, Jr. (Wake Forest College), Gibson, N. C.
 Givens, Dingess Monroe (Duke University), Pearisburg, Va.
 Hale, Lois Sue (University of Georgia), Decatur, Ga.
 Hall, James Samuel, Jr. (Duke University), Fayetteville, N. C.
 Harley, Eugene Lincoln (Bates College), Liberia, Africa.
 Harrison, Thomas Harold (West Virginia University), Huntington, W. Va.
 Hill, David Bennett (Wake Forest College, University of North Carolina, School of Public Health), Rutherfordton, N. C.
 Howell, Ralph Rodney (Davidson College), Concord, N. C.
 Howse, Ralph Melvin (Duke University), Fairfield, Ala.
 Hurst, Lawrence Ronald (Duke University), Mataoka, W. Va.
 James, Walter Scott, Jr. (Duke University), Waynesboro, Pa.
 Johnson, Paul Armstrong (Duke University), White Plains, N. Y.
 Karpman, Stephen Benjamin (Duke University), Washington, D. C.
 Keller, Donald Holland (Florida Southern College, Duke University), Plant City, Fla.
 Kirkman, Shirley Elizabeth (Duke University), High Point, N. C.
 Kitlowski, Edward John (Duke University), Baltimore, Md.
 Lackey, Dixon Alexander (Duke University), Asheville, N. C.
 LeBauer, Sidney Irwin (Duke University), Greensboro, N. C.
 McInnis, Angus Guy, Jr. (Davidson College), Sanford, Fla.
 Meltzer, Charles Curtis (University of N. C., University of Va.), Miami, Fla.
 Moseley, Robert Galloway (Duke University), Bluefield, W. Va.
 Myrick, Sam E., Jr. (Davidson College), Jacksonville, Fla.
 O'Mansky, Boris Louis (Duke University), Leesville, N. C.
 O'Mansky, Samuel Isaac (Duke University), Leesville, N. C.
 O'Neill, James Frank (Vanderbilt University), Miami, Fla.
 Painter, William Edward (Duke University), Mt. Holly, N. C.
 Pantelakos, Constantine George (Duke University), Rocky Mount, N. C.
 Patrick, Roman Lce, Jr. (Duke University), Englehard, N. C.
 Pepper, George (Duke University, Columbia University), New York, N. Y.
 Perkins, Henry Thomas, Jr. (Duke University), Durham, N. C.
 Pillsbury, Richard Theodric, Jr. (University of North Carolina), Salisbury, Md.
 Poston, Roert Lewis (Davidson College), Rocky Mount, N. C.

Powell, Albert Henry, Jr. (Duke University), Durham, N. C.
 Proctor, William Ivan, Jr. (University of North Carolina), Raleigh, N. C.
 Redmond, James Seymour, Jr. (Duke University), Asheville, N. C.
 Reese, Owen, Jr. (Davidson College), High Point, N. C.
 Ridgeway, Nathan Alvah, Jr. (Furman University), Greenville, S. C.
 Rogers, Richard Lionel (Clemson College), Hartsville, S. C.
 Roughton, Ralph Emerson, Jr. (Duke University), Sandersville, Ga.
 Sanders, Clyde Vernon, Jr. (Centenary College), Monroe, La.
 Sappenfield, Luther Cook, Jr. (Davidson College), Charlotte, N. C.
 Satterfield, George Howard, Jr. (North Carolina State College), Raleigh, N. C.
 Schulz, Harold Paul, Jr. (Menlo College, Tufts College, University of California).
 San Francisco, Cal.

Schwartz, Melvin Jay (University of North Carolina), Wilmington, N. C.
 Seagle, Lee Marcus, Jr. (Davidson College), Black Mountain, N. C.
 Shingleton, Hugh Maurice (Duke University), Wilson, N. C.
 Smith, Robert Laber (Duke University), Shaker Heights, Ohio.
 Smith, Whitman Erskine, Jr. (Duke University), Albemarle, N. C.
 Solomon, Alan (Bucknell University), New York, N. Y.
 Spoto, Angelo Peter, Jr. (University of Florida), Tampa, Fla.
 Sweeney, Charles Leslie, Jr. (Cornell University), Wilmington, Del.
 Taylor, Robert Wade (University of Mississippi), Brooksville, Miss.
 Thorn, Drury Russell (University of Missouri), Kansas City, Mo.
 Weiss, Edward Bernard (University of Florida), St. Petersburg, Fla.
 Wilkes, Marcus Branch, Jr. (Erskine College, Middlesex Medical School), Laurinburg, N. C.
 Woods, Dorothy Bevis Longstreth (University of Arizona), Princeton, N. J.
 Yancey, Henry Alexander, Jr. (Duke University), Charlotte, N. C.
 Zener, Karl Adams (Harvard University), Durham, N. C.
 Zerby, Arthur Wm. Elwood, Jr. (Albright College, Duke University), Reading, Pa.

CLASS OF 1956 WITH INTERNSHIP APPOINTMENTS

Ronald Eugene Allison (Hollywood, Fla.), Tampa Municipal Hospital, Tampa, Fla.
 Dewey Lockwood Barton (Daytona Beach, Fla.), Wm. Beaumont Army Hospital, El Paso,
 Texas

Gordon Donald Benson (Red Lake Falls, Minn.), New York Hospital, New York, N. Y.
 Edward Brooking Brown (Scranton, Pa.), Buffalo General Hospital, Buffalo, N. Y.
 William Blair Bryan (Battleboro, N. C.), Charity Hospital, New Orleans, La.
 Daniel Erskine Carmichael (Birmingham, Ala.), Grady Memorial Hospital, Atlanta, Ga.
 Abel Paul Carswell, Jr. (Durham, N. C.), Duke Hospital, Durham, N. C.
 Louis Augustus Coffin, III (New York, N. Y.), St. Louis Children's Hospital, St. Louis, Mo.
 Harold Davis Cranford (Chapel Hill, N. C.), Duke Hospital, Durham, N. C.
 Marion Carlyle Crenshaw, Jr. (Durham, N. C.), Duke Hospital, Durham, N. C.
 Julian Clark Culton (Charlotte, N. C.), Presbyterian Hospital, New York, N. Y.
 Yancey Golet Culton, Jr. (Durham, N. C.), Duke Hospital, Durham, N. C.
 William Alexander Davis, Jr. (Charlotte, N. C.), Charlotte Memorial Hospital, Charlotte, N. C.
 Elmer Andrew Deiss, Jr. (Lexington, Ky.), Salt Lake County General Hospital, Salt Lake
 City, Utah

William Andrew Dickinson, Jr. (Cape Charles, Va.), The New York Hospital, New York,
 N. Y.

Charles Laing Dorsey (Salem, Va.), Duke Hospital, Durham, N. C.
 Laurie Lester Dozier, Jr. (Tallahassee, Fla.), Grady Memorial Hospital, Atlanta, Ga.
 James Frank Easterling (Rocky Mount, N. C.), St. Albans Naval Hospital, New York, N. Y.
 Robert Mayo Failing (San Marino, Calif.), Los Angeles County General Hospital, Los Angeles,
 Calif.

Richard Sparre Foster (Washington, D. C.), Grady Memorial Hospital, Atlanta, Ga.
 Richard Neil Fredericks (Brooklyn, N. Y.), Baltimore City Hospital, Baltimore, Md.
 John Andrew Gehweiler, Jr. (Jamaica, N. Y.), Philadelphia Naval Hospital, Philadelphia, Pa.
 James Franklin Gibson (Wilmington, N. C.), Tampa Municipal Hospital, Tampa, Fla.

Harvey Lee Griffin, Jr. (Asheboro, N. C.), The Queen's Hospital, Honolulu, T. H.
 Joseph Hammond Hardison, Jr. (Raleigh, N. C.), The New York Hospital, New York, N. Y.
 William Lada Hassler (Ft. Lauderdale, Fla.), University Hospitals of Cleveland, Cleveland,
 Ohio

Alan Morton Hollett (Wilmington, Delaware), Delaware Hospital, Wilmington, Del.
 Andrew Ferree Horne (Welch, West Va.), Duke Hospital, Durham, N. C.
 Robert Mackay Howard (Savannah, Ga.), Emory University Hospital, Emory University, Ga.
 Peter Hutchin (Cleveland, Ohio), Grace-New Haven Community Hospital, New Haven, Conn.
 James Robert Jackson (Fayetteville, N. C.), Duke Hospital, Durham, N. C.
 Joseph Hoyt Jackson, Jr. (Shreveport, La.) Confederate Memorial Medical Center, Shreveport,
 La.

Douglas Marion Johnson (Macon, Ga.), Tampa Municipal Hospital, Tampa, Fla.
 Eugene Joseph Josephak (Tonowanda, New York), Buffalo, General Hospital, Buffalo, N. Y.
 Horace Smith Kent (Mesa, Ariz.), Salt Lake County General Hospital, Salt Lake City, Utah
 Edward Richard Koger (Hialeah, Fla.), Barnes Hospital, St. Louis, Mo.
 Eugene Leslie Konrad (Yonkers, N. Y.), The Mt. Sinai Hospital, New York, N. Y.
 Frank Alexander Lang, Jr. (Ft. Lauderdale, Fla.), Parkland Memorial Hosp., Dallas, Tex.
 Pope Matthews Lee (Biltmore Forest, N. C.), Louisville General Hospital, Louisville, Ky.
 Vernon Presley Mangum (Hamlet, N. C.), Watts Hospital, Durham, N. C.
 William Edward McGough (West New York, N. J.), Radcliffe Infirmary, Oxford, England
 Harry Jack Metropol (Manning, S. C.), Albany Hospital, Albany, N. Y.
 David Edmond Miller (Raeford, N. C.), Duke Hospital, Durham, N. C.
 Henry Curtis Mostellar, Jr. (Mobile, Ala.), Duke Hospital, Durham, N. C.

John William Neal (Monroe, N. C.), Tampa Municipal Hospital, Tampa, Fla.
 Bruce Newell, Jr. (Roxboro, N. C.), Memorial Hospital, Danville, Va.
 Sidney Olansky (Durham, N. C.), Duke Hospital, Durham, N. C.
 George Wesley Paulson (Raleigh, N. C.), Bellevue Hospital, New York, N. Y.
 Hugh Oliver Pearson, Jr. (Pinetops, N. C.), Grady Memorial Hospital, Atlanta, Ga.
 James Harold Pollock (Ft. Myers, Fla.), Parkland Memorial Hospital, Dallas, Tex.
 Edna Anne Preston (Durham, N. C.), Duke Hospital, Durham, N. C.
 George Rufus Ratchford, Jr. (Gastonia, N. C.), University Hospitals of Cleveland, Cleveland, Ohio
 Adehemar William Renuart (Miami, Fla.), Duke Hospital, Durham, N. C.
 Robert LeRoy Rollins, Jr. (Farmville, N. C.), Charlotte Memorial Hospital, Charlotte, N. C.
 Philip Leon Roseberry (York, Pa.), Philadelphia General Hospital, Philadelphia, Pa.
 James Vincent Ross, Jr. (Pittsburgh, Pa.), Mercy Hospital, Pittsburgh, Pa.
 Virginia Oates Sanford (Greensboro, N. C.), Duke Hospital, Durham, N. C.
 Jerome Miles Schachter (New York, N. Y.), Bellevue Medical Center, New York, N. Y.
 Noel Asher Schweig (New York, N. Y.), Long Island Jewish Hospital, Long Island, N. Y.
 Joseph Walter Shands, Jr. (Jacksonville, Fla.), Duke Hospital, Durham, N. C.
 Clyde Norman Shealy (Camden, S. C.), Duke Hospital, Durham, N. C.
 Carroll Clifton Shoemaker (Raleigh, N. C.), Duke Hospital, Durham, N. C.
 James Marshall Sloan, III (Gastonia, N. C.), Charity Hospital, New Orleans, La.
 Richard Austin Steele (Asheville, N. C.), Bellevue Hospital, New York, N. Y.
 Sheldon Haskell Steiner (Bronx, N. Y.), Duke Hospital, Durham, N. C.
 Lehman Newell Sterling (Broomall, Pa.), U. S. Naval Hospital, Jacksonville, Fla.
 Saul Strauss (Brooklyn, N. Y.), Bronx Municipal Hospital Center, Bronx, N. Y.
 Edward George Stuart (West Chester, Pa.), Chester County Hospital, West Chester, Pa.
 Shin Tanaka (Durham, N. C.), Chester County Hospital, West Chester, Pa.
 James Joye Townsend (Jacksonville, Fla.), Charity Hospital, New Orleans, La.
 John Calhoun Turner (Fair Bluff, N. C.), Confederate Memorial Medical Center, Shreveport, La.
 Thomas Doyle Vance (Spruce Pine, N. C.), Vanderbilt University Hospital, Nashville, Tenn.
 George Britain Walton, Jr. (Chadbourne, N. C.), Georgia Baptist Hospital, Atlanta, Ga.
 Alan Duane Whanger (Cleveland, Ohio), St. Luke's Hospital, Cleveland, Ohio
 Harry Applewhite Whitaker, Jr. (Rocky Mount, N. C.), Duke Hospital, Durham, N. C.
 George Dewey Wilbanks, Jr. (Tampa, Fla.), Pennsylvania Hospital, Philadelphia, Pa.
 Charles Albert Wilkinson (Wake Forest, N. C.), Duke Hospital, Durham, N. C.
 Colon Hayes Wilson, Jr. (Havelock, N. C.), University of Virginia Hospital, Charlottesville, Va.
 Robert Emerson Windom (St. Petersburg, Fla.), Parkland-Memorial Hospital, Dallas, Tex.
 Hadley Rasch Young (Duluth, Minn.), St. Mary's Hospital, Duluth, Minn.

SUMMARY

(At beginning of Autumn Quarter, October 1, 1956)

MEDICAL STUDENTS

	<i>Men</i>	<i>Women</i>	<i>Total</i>
First Year.....	73	3	76
Second Year.....	72	4	76
Third Year.....	79	4	83
Fourth Year.....	78	3	81
	<u>302</u>	<u>14</u>	<u>316</u>

Total Graduates 1932-1956 = 1,581.

PARAMEDICAL STUDENTS

School of Nursing.....	—	288	288
Dietetic Interns.....	—	10	10
Medical Technology Students.....	—	20	20
Physical Therapy Students.....	7	15	22
Graduate Medicine.....	197	10	207
Hospital Administration.....	8	—	8
Anesthesiology.....	—	16	16
X-ray Technology.....	4	9	13
Pharmacy Interns.....	1	—	1
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BULLETIN
OF
DUKE UNIVERSITY



The School of Law

ANNOUNCEMENTS FOR 1957-1958

VOLUME 29

April, 1957

NUMBER 6-B

Annual Bulletins

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Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

BULLETIN
OF
DUKE UNIVERSITY

THE SCHOOL OF LAW



ANNOUNCEMENTS FOR 1957-1958

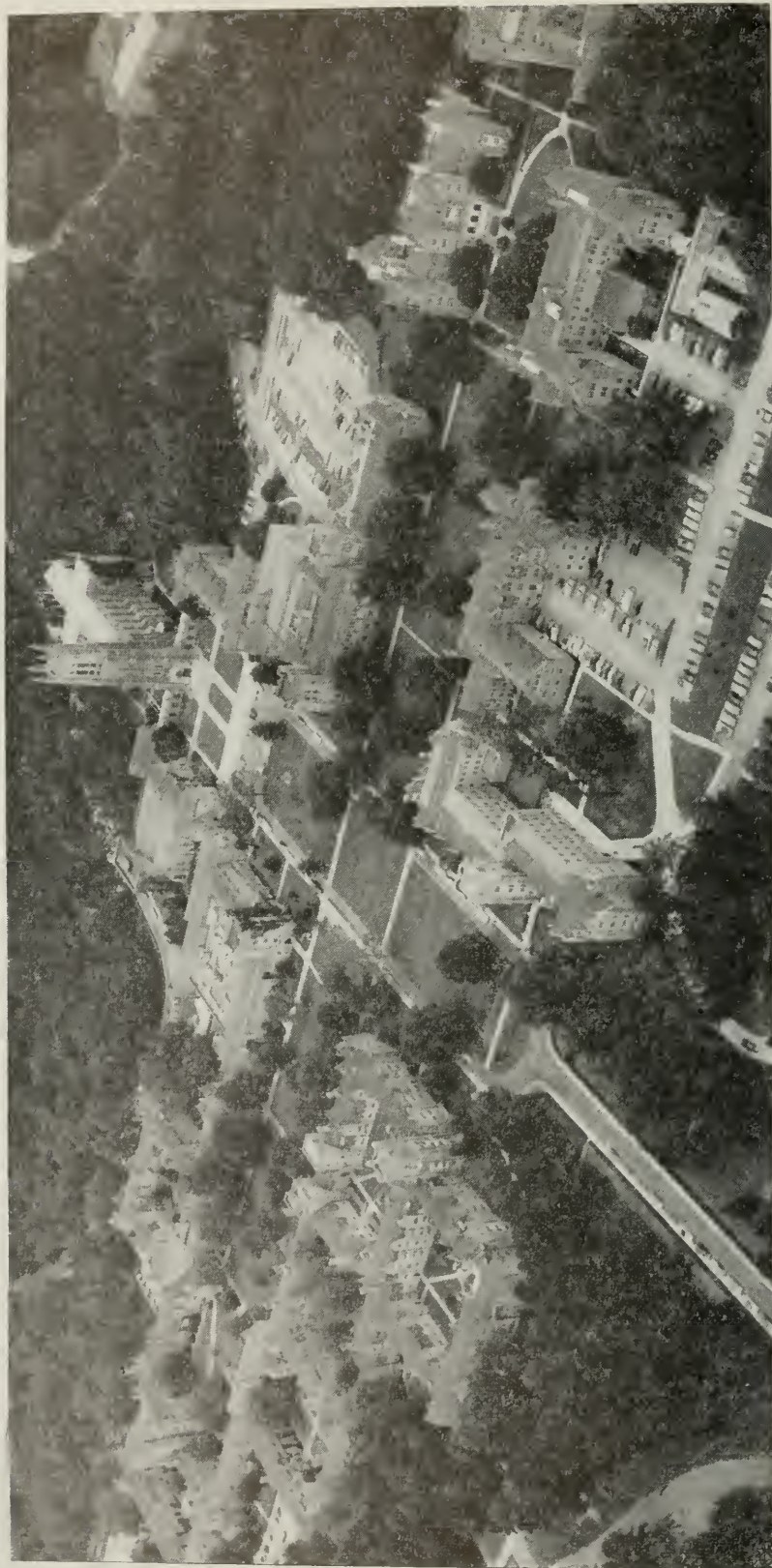
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THE MAIN UNIT OF THE UNIVERSITY WEST CAMPUS

Calendar 1957-1958



1957

- Sept. 16—Monday, Registration day.
Sept. 17—Tuesday, Classes begin, 9 A.M.
Nov. 27—Wednesday, Thanksgiving holidays begin, 1 P.M.
Dec. 2—Monday, Classes resumed, 9 A.M.
Dec. 21—Saturday, Christmas recess begins, 1 P.M.

1958

- Jan. 6—Monday, Classes resumed, 9 A.M.
Jan. 14—Tuesday, Fall semester classes end, 5 P.M.
Jan. 16—Thursday, Mid-year examinations begin.
Jan. 25—Saturday, Mid-year examinations end.
Jan. 27—Monday, Spring semester classes begin, 9 A.M.
March 22—Saturday, Spring vacation begins, 1 P.M.
March 31—Monday, Classes resumed, 9 A.M.
May 17—Saturday, Spring semester classes end, 1 P.M.
May 19—Monday, Final examinations begin.
May 29—Thursday, Final examinations end.
May 31—Saturday, Commencement begins.
June 2—Monday, Graduating exercises.

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Ph.B. 1899, LL.B. 1900, State University of Iowa; LL.B. 1904, Harvard University; LL.D. 1937, Tulane University; LL.D. 1939, Wake Forest College; Assistant Professor of Law, University of Wisconsin, 1904-1907; Professor of Law, State University of Iowa, 1907-1930; University of Michigan, Summer 1922; University of Wisconsin, Summer 1924; University of Southern California, Summer 1931; Stanford University, Summer 1936; Adviser, Council of Legal Education and Admissions to the Bar of ABA, 1927-1930, member of Council, 1940-1945; Secretary, Association of American Law Schools, 1926-1928, President, 1929; Dean and Professor of Law, Duke University, 1934-1947; Professor of Law, 1930-1934, 1947-1948; Professor of Law Emeritus, since 1948.

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B.S. 1923, Bowdoin College; J.D. 1930, University of Michigan; J.Sc.D. 1936, Columbia University; Instructor in Romance Languages, University of Vermont, 1923-1927; general practice, 1930-1933; Special Fellow, Columbia University, 1933-1934; Associate Professor of Law, University of Kansas, 1934-1935; Professor of Law, University of Missouri, 1935-1937; George Washington University, Summer 1937; Stanford University, Summer 1938; University of North Carolina, Summer 1942, 1947, 1949, 1956; University of Texas, Summer 1951; Fulbright lecturer, University of Pavia, Italy, 1954; Special Assistant to the American Ambassador, Caracas, 1942-1943; Acting Assistant Chief, Foreign Funds Control Division, Department of State, 1943; Professor of Law, Duke University, since 1937.

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CHARLES L. B. LOWNDES, A.B., LL.B., S.J.D., *James B. Duke Professor of Law.*

A.B. 1923, Georgetown University; LL.B. 1926, S.J.D. 1931, Harvard University; general practice, 1926-1927; Assistant Professor of Law, Georgetown University, 1927-1928; Professor of Law, Georgetown University, 1928-1930; Research Fellow, Harvard Law School, 1930-1931; Professor of Law, Georgetown University, 1931-1934; Professor of Law, Duke University, since 1934.

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A.B. 1922, J.D. 1924, University of California; S.J.D. 1926, Harvard University; general practice, 1924-1925; Assistant Professor of Law, University of California, 1926-1927; Professor of Law, University of Southern California, 1927-1930; Visiting Professor of Law, Columbia University, 1928-1929; Yale University, second semester, 1935-1936; University of California, Summer 1927; Cornell University, Summer 1928; University of Chicago, Summer 1929; University of Southern California, Summer 1930; Stanford University, Summer 1935; University of North Carolina, Summer 1936, 1948; Special Assistant to the Attorney General of the United States, 1938-1939, 1942-1943; Chief of Wage-Hour Unit, Department of Justice, 1939; Chief Consultant to the General Counsel, Board of Economic Warfare, 1942; Chief Legal Consultant, Office for Emergency Management, 1942-1943; Solicitor, United States Department of Labor, 1943-1945; Professor of Law, Duke University, since 1930.

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A.B. 1947, Columbia University; LL.B. 1950, Yale University; 2nd Lt., FA (AUS), 1943-1946; general practice, 1950-1951; Counsel, Wage Stabilization Board, 1951-1952; Bigelow Fellow, University of Chicago Law School, 1952-1953; Assistant Professor of Law, Duke University, 1953-1956; Associate Professor of Law, Duke University, since 1956.

DALE F. STANSBURY, B.S., LL.B., J.S.D., *Acting Dean and Professor of Law.*

B.S. 1914, Valparaiso University; LL.B. 1917, Indiana University; J.S.D. 1929, Yale University; Sterling Research Fellow, Yale University, 1928-1929; Deputy Attorney General of Indiana, 1918-1924, 1928; private practice, 1925-1927; Professor of Law, Mercer University, 1929-1935; Dean and Professor of Law, Wake Forest College, 1935-1944; Professor of Law, University of Tennessee, 1944-1946; Professor of Law, Duke University, since 1946.

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A.B. 1918, Austin College; A.M. 1922, Princeton University; Ph.D. 1927, Harvard University; LL.D. 1940, Austin College; Carnegie Fellow in International Law, 1922-1923, 1924-1925; Member, Advisory Committee, Harvard Research in International Law, 1935—; Member, Board of Editors, *American Journal of International Law*, 1937—; United States Department of State: Assistant in Treaty Division, 1931-1932; Adviser on Commercial Treaties, 1944-1946; Consultant on Commercial Treaties, at various times, 1946-1953; Assistant Professor of Political Science, Duke University, 1925-1927; Associate Professor, 1927-1929; Professor 1929—; Chairman, Department of Political Science, Duke University, 1934-1948; Fulbright Professor, Law School of Istanbul University, 1951-1952; Lecturer on International Law (School of Law), since 1948.

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The School: Its Purposes and Methods



BUILT on the foundation of the School of Law of Trinity College, with its history of legal instruction running back to the middle of the past century, the Duke University School of Law was established in 1924. In 1930 the School was moved into its present building, the Faculty and library were greatly increased, and the activities of the School broadened. The School of Law is a member of the Association of American Law Schools and is on the "Approved List" of the American Bar Association. Twenty-four states, one foreign country and sixty-three institutions of higher learning are represented in its student body.

The curriculum of the School of Law provides thorough preparation for the practice of law in any state; its graduates have been admitted to the bar in nearly every state and territory. Opportunities for specialization in particular branches of the law are afforded.

In carrying out the trust imposed by the indenture establishing the Duke Endowment, the School of Law seeks to have the student acquire knowledge and comprehension not only of legal doctrine, but also of the judicial process and of the social, economic, and political problems with which law and lawyers must deal. The method of instruction employed compels analysis of judicial opinions and inquiry into the non-legal as well as the legal considerations which underlie them. In appropriate courses, special consideration is given to the work of the legislative and administrative agencies of government. In recognition of the increasing importance of the role of the lawyer in representing private interests before government agencies and in government service, a broad program is offered in the public law field. Scope for creative student work is provided by seminar courses and supervised individual study and research.

Practical training is not left for the first years of practice. A carefully integrated series of courses is designed to give students actual experience in the work of lawyers. Legal research and writing courses and moot court work in the first and second years are followed in the third by seminar courses emphasizing legal planning and drafting and by practice courses and work in the Legal Aid Clinic. A student bar association affords a means whereby the student may gain acquaintance with the professional organizations through which a lawyer may and should contribute to the well-being of his profession and of society.

For details of the program of study see Program of Instruction, page 28. The separate courses are described on pages 30 through 35.

Admission, Registration, and Fees



Admission

DIRECTIONS TO APPLICANTS FOR ADMISSION

APPPLICATION must be made on the prescribed Law School application blank which will be sent upon request. No application can be finally passed upon until all required documents are on file. These documents are: (1) the application itself, to which a recently made personal photograph should be attached; (2) a complete transcript of record and evidence of graduation or right to honorable withdrawal from the institution from which credit is offered; (3) a report of the applicant's score on the Law School Admission Test described below; (4) letters from an official of the college attended and from three or more responsible persons who are acquainted with the applicant's character and general qualifications. These letters will be requested by the Law School, and the applicant need only furnish the names and addresses of persons from whom the desired information can be obtained.

The Law School seeks to select students who give promise of leadership in some of the various phases of professional activity. Applicants for admission and their sponsors are requested to keep this fact in mind.

The Law School Admission Test, referred to above, is administered by the Educational Testing Service and is participated in by a number of the leading law schools of the country. It is given four times a year at examination centers conveniently located throughout the United States. No special preparation for the test is necessary, since it is designed to measure aptitudes rather than knowledge of subject matter. The applicant's score on the test will be considered along with other data in passing upon his admission to the Law School. Application forms and information concerning the test should be procured by writing directly to the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

TIMES OF ADMISSION

Beginning students may enter only at the opening of the Fall semester in any year. Students who have completed the first year of law study at this or any other law school approved by the Association of American Law Schools may enter at the beginning of any semester.

REQUIREMENTS FOR ADMISSION

An application for admission as a candidate for the degree of Bachelor of Laws may be submitted by any person (1) who is a graduate of a college of approved standing, or (2) who has completed in a college of approved standing work equivalent in number of units to three-fourths of that required for graduation and whose college work in its entirety shows an average grade equal to that required for graduation, the requirement in each case being determined by the regulations of the college where the work was taken.

COMBINED COURSE

A number of colleges, upon application by their students, have permitted those who have completed three years of undergraduate work to enter the Law School of Duke University and upon the satisfactory completion of the first year of law school work to receive their Bachelor of Arts degree from such colleges. It is suggested that students desiring to enter Duke University School of Law make inquiry of their proper college authorities regarding this point.

A student from an undergraduate college of Duke University who has completed therein three years of study may apply to that college to enroll in a combined course wherein his first year of law study may be accepted toward the Bachelor of Arts degree, and, upon the completion of four additional semesters of law study, he will receive the Bachelor of Laws degree.

ADMISSION TO ADVANCED STANDING

Any person who has complied with the requirements for admission set forth in this announcement prior to the commencement of his law study, who presents evidence of the satisfactory completion of at least one year of study at any law school which is a member of the Association of American Law Schools, and who is eligible for readmission to the law school from which he proposes to transfer, may be admitted to advanced standing, subject to such rules as would be applicable to students in this School having a comparable scholastic record. Provisional credit for courses so completed will be given, final credit being conditioned on the completion of at least one full year of law study in this School with an average at least five points above the passing grade. Adjustment of credit for work done in such other law schools may be made by the Dean or by vote of the Faculty.

CANDIDATES FOR GRADUATE DEGREES

Applications for admission to graduate study should be addressed to the Dean of the Law School and should include transcripts of records of legal and pre-legal work. For the requirements for the graduate degrees, see pages 20 and 21.

Registration

Registration is conducted in the Law Building. All students, both old and new, are required to register at the beginning of each semester, at which time class schedules and course cards must be filled out and approved. Students who register in any semester at a date later than that prescribed are required to pay to the Treasurer of the University a penalty of \$5.00 for late registration unless excused therefrom. A student's registration for any semester is not complete until he has paid the tuition and fees for that semester. The \$5.00 penalty for late registration will be imposed, therefore, unless the student has paid his tuition and fees by registration day.

REGISTRATION FOR BAR EXAMINATION

Many states now require that a student, prior to or shortly after beginning the study of law, register with the board of bar examiners of the state if he intends to practice therein. Each student should write to the secretary of the board of bar examiners of the state in which he plans to practice and ascertain if that state makes this requirement.

CONDUCT OF STUDENTS

All students are admitted subject to the rules of the University and of the School of Law, and continuance in the School is conditioned upon the observance of such rules.

The University expects of its students loyal and hearty co-operation in developing and maintaining high standards of conduct as well as of scholarship. The University, therefore, reserves the right, and matriculation by the student is a concession of this right, to compel the withdrawal of any student whose conduct at any time is not satisfactory to the University.

Fees and Expenses

Tuition fees are due at the beginning of each semester. The tuition fee is \$225.00 a semester. In addition, a general fee of \$50.00 per semester is required in lieu of separate fees for matriculation, medical service, and the like.

The admission of an applicant is not final until he deposits the sum of \$25.00 with the Treasurer of the University. This deposit will not be returned. It will be credited to the account of the student or, if the student is entitled to the benefits of the Servicemen's Readjustment Act or the Vocational Rehabilitation Act, it will be refunded upon his matriculation.

Law students may secure admission to all regularly scheduled University athletic contests held on the University grounds during the

entire academic year by payment of the athletic fee of \$10.00 per year plus any Federal taxes that may be imposed. This fee is payable in the fall semester.

The payment of the general fee entitles the student to full medical and surgical care, with the exceptions noted below. This service is under the direction of the University Physician with the co-operation of the staff of Duke Hospital. It includes hospitalization, medical and surgical care, drugs, dressings, X-ray studies, and ward nursing. A charge for board is made at the same rate as in the University dining halls. Refraction of eyes, treatment of teeth and of all chronic conditions, such as the removal of diseased tonsils, are not included in this service. The cost of any necessary braces and orthopedic appliances, as well as of special nursing, must be borne by the student.

Due to rising costs it may be necessary to consider some readjustment of charges. In the event of an adjustment applicants will be notified.

SCHOLARSHIPS AND LOAN FUNDS

Scholarships covering tuition (\$450) are available to a limited number of first-year students, graduates of approved American universities and colleges, who are in need of such assistance. Applicants must have made excellent records in their college work and must show unusual promise of success in the study of law. In cases of exceptional merit, larger scholarships amounting to as much as \$850 may be awarded.

In addition to the general scholarship fund, five regional scholarships of \$1,000 each for applicants from North Carolina and South Carolina have been made available. Such scholarships will be awarded annually on a competitive basis to the residents of the states of North Carolina and South Carolina who qualify as entering law students. Such scholarships are renewable for a maximum period of three years on the condition that the holder maintain a scholastic average of "B" or higher in the School of Law. The total amount awarded to the recipient who qualifies for the maximum period is \$3,000. Details concerning these scholarship awards will be furnished upon request.

Applications for scholarships should be submitted to the Dean of the Law School, together with a transcript of college work and letters of recommendation from responsible persons, certifying to the character and fitness of the applicant.

Scholarship assistance will be continued as to second- and third-year students maintaining a high standard of work. The average cost of a year at Duke is approximately \$1500, which includes tuition, general fees, board, room and books. There are also a number of positions as assistants in the Law Library and as research assistants which are open to students, particularly in their second or third year, who do not receive other aids from the University.

The University administers certain endowed loan funds for the benefit of students who are not able to meet their expenses, for the purpose of helping worthy students who have established a satisfactory record at the School to continue their education.

Two funds have been provided out of which small loans may be made to tide students over temporary financial emergencies arising during the course of the year. One of these was supplied by the Law School Guild and is limited as to amount and duration of loan. The other is due to the generosity of Mr. P. Frank Hanes of the Winston-Salem bar and is limited to the needs of selected students. These funds are administered by a committee of the Faculty.

GRADUATE LAW FELLOWSHIPS

Graduate fellowships in limited amounts are available. To be eligible for these grants, applicants must have completed with distinction the work required for the first degree in law at this Law School or some other school approved by the Association of American Law Schools, and must have been admitted to candidacy for the LL.M. or J.S.D. degree. Preference will be given to students who plan to make law teaching a career. All applications should be addressed to the Dean of the School of Law, Duke University. Fellowships will be awarded by the law Faculty on recommendation of the Committee on Graduate Study.

DINING SERVICE

Food service is cafeteria style. The cost of meals approximates \$1.75 to \$2.50 per day, depending on the need and taste of the individual. The dining facilities on the West Campus include three cafeterias with multiple-choice menus and the Oak Room where full meals and a la carte items are served.

In the Men's Graduate Center there is a cafeteria with multiple choice menus and a Coffee Lounge where sodas and sandwiches are served from 11:30 A.M. to 11:00 P.M. The prices in these dining rooms are the same as on the West Campus.

THE MEN'S GRADUATE CENTER

The Men's Graduate Center is available to men of the graduate and professional schools. It has facilities for four hundred men, complete with lounges, study rooms, recreational rooms, post office and dining hall. The rooms are equipped for two persons and the rental charge for a double room is \$350.00 for the academic year, or \$87.50 for each occupant each semester. Rooms are rented for a period of not less than one semester. Unless special arrangements are made, the rate is \$1.00 per day with a minimum of \$25.00.

Room reservations are made through the Housing Bureau only after official acceptance for admission to the University. A \$25.00 room deposit is required of each applicant before a room reservation is made. The initial room deposit is effective during the student's residence in the University if attendance is continuous in regular academic years.

This deposit will be refunded under the following conditions:

- a. Within thirty days after the student has been graduated.
- b. Upon withdrawal from the University, provided written notice is received in the Housing Bureau by August 1, for cancellation of a reservation for the fall semester; and not later than January 15, for cancellation of a reservation for the spring semester.
- c. When the reasons requiring withdrawal are beyond the student's control.

No refund is made until the occupant has checked out of his room through the Housing Bureau and has settled all of his account with the Treasurer.

A resident student, in order to retain his room for the succeeding academic year, must make application at the office of the Housing Bureau for confirmation of the reservation in accordance with the plan that is published during the school year.

Any exchange of rooms must be arranged at the Housing Bureau. Persons exchanging rooms without the approval of the Housing Bureau will be subject to charges for both rooms.

The authorities of the University do not assume responsibility for the persons selected as roommates. Each student is urged to select his roommate when the room is reserved.

Beds and mattresses (39"x74"), tables, chairs, dressers, mirrors, and window shades are furnished by the University. The student supplies linens, blankets and pillows. Rugs, totaling not more than 54-square-feet, study lamps and curtains are permissible, and if desired, are furnished by the room occupants.

Regulations governing the occupancy of rooms will be supplied directly from the Housing Bureau when room reservations are made. Occupants are expected to abide by these regulations.

Law students are advised to make early application to the Housing Bureau, Duke Station, Durham, North Carolina, since assignment of rooms is made considerably in advance of the beginning of each semester. The applicant should state that he has been accepted for admission to the School of Law.

LAWS REGARDING PAYMENTS

The Executive Committee of Duke University has enacted the following regulations which govern the payment of all fees due the University:

1. The President and the Treasurer of the University have no authority to suspend or in any way alter these regulations.

2. Any student who has failed to pay his bills on the dates advertised in the catalogue is denied the right to attend classes until his account is settled in full; subsequent withdrawal does not entitle a student to a refund.

3. No student is considered by the Faculty as an applicant for graduation until he has settled with the Treasurer for all his indebtedness to the University.

4. No student who has not settled all his bills with the Treasurer of the University is allowed to stand the midyear or final examinations of the academic year.

When a student wishes his bills sent to his parents or guardian, the student or his parent or guardian must so notify the Treasurer of the University in writing in due time, but this in no way releases the student from liability to established penalties, if his bills are not paid on the dates advertised.

Further information will be sent upon request. Address

THE DEAN OF THE SCHOOL OF LAW

DUKE UNIVERSITY

Durham, North Carolina

Bachelor of Laws Degree



UPON favorable recommendation of the Faculty, the degree of Bachelor of Laws will be conferred on students who shall have successfully completed six semesters' study of law, the last two semesters of work immediately preceding the granting of such degree having been completed in this School.

A student shall be deemed to have completed successfully six semesters' study of law if during this period he has

(1) secured a passing grade in courses aggregating seventy-eight semester hours;

(2) secured in every required course a grade not requiring repetition thereof; and

(3) secured a weighted average at least five points above passing in all work taken other than first-year courses, or, if the grade in such work is lower than that above specified, an average grade of five points above passing in all work taken.

Students who have spent only their last two semesters of study in residence in this School must have received a weighted average at least five points above passing for that year.

MINIMUM AND MAXIMUM STUDENT LOADS

No regular student is permitted to take less than ten course hours per semester. No first-year student is permitted to take courses in excess of the first-year program.

Second- and third-year students are not permitted to take for credit more than fifteen course hours per semester; nor to audit and take for credit more than sixteen course hours per semester. In exceptional cases, students may petition the Faculty for permission to take more or less than the prescribed maximum or minimum loads.

ATTENDANCE

Regular class attendance is required. The right to take the examinations, as well as the privilege of continuing one's membership in the School at any time, is conditioned upon regular attendance at the exercises of the School.

STANDARDS OF SCHOLARSHIP

GRADES.—The final grades in each course are given in numerical terms which are equivalent to letter grades according to the following scale: 80 to 100, A; 70-79, B; 55-69, C; 50-54, D; 0-49, F.

A grade of 50 is necessary for passing a course. Where a grade below 50 is given a student in any required course, the course must be repeated if the instructor reports the grade with the notation "must repeat." When a student is required by the instructor to repeat a course which he has failed, the grade given after such repetition supersedes the previous grade in the course.

ELIGIBILITY TO CONTINUE LAW STUDY.—Any student who at the end of his first year or at the end of any subsequent semester, has an average grade lower than 50 on all the work then taken is ineligible to continue his work in the School. Any other student (1) whose average final grade at the end of his first semester is below 50, or (2) whose average grade at the end of any subsequent semester on all the work then taken is below 55, or (3) who in any single semester or in any single year receives failure grades in courses totaling eight or more semester hours, may at any time be declared by the Dean ineligible to continue.

NOTIFICATION OF UNSATISFACTORY SCHOLASTIC STANDING.—Every student subject to the provisions of the second sentence of the paragraph above, who has not been declared ineligible to continue his work in the School will be given a formal, written notice by the Dean's Office. This notice will set forth his average grade or grades and inform him (1) that he will be subject for the ensuing year to the special supervision of the Dean who may order his dismissal from the School in the event of his failure to maintain a satisfactory scholastic standard, and (2) that he will be ineligible to receive a degree unless his work meets the scholastic requirements for graduation which will be set forth in full in such notice.

Every other student whose average final grade at the end of any semester on the work of that semester, or on all work then taken, does not exceed the minimum average grade required for graduation by more than two points will be given a notice similar to that provided for above.

Graduate Work in Law



Objectives of the Graduate Study Program

THE graduate program of the School of Law is framed with a view to the encouragement and recognition of legal scholarship. It is addressed to the needs of those who have objectives consistent with the purposes of graduate legal education. It provides training for the qualified student who aspires to a teaching career, or who wishes to become proficient in a special field of the law, to do serious legal research, to prepare himself for a public law practice in or out of government, or to acquire a broader and deeper legal education than the undergraduate curriculum offers.

Master of Laws

ADMISSION TO CANDIDACY FOR THE DEGREE OF MASTER OF LAWS

Any person who has received the first degree in law from a law school qualified for membership in the Association of American Law Schools may be admitted as a candidate for the degree of Master of Laws, provided he satisfies the Committee on Graduate Study that his objective in desiring to do graduate work in law is consistent with the purposes for which the program is offered, and provided he demonstrates to the Committee, on the basis of his law school record, his capacity to take and profit by graduate work in law. In exceptional cases an applicant who does not meet the above requirements may, on vote of the Faculty, be admitted to candidacy for this degree if he is able to demonstrate that he is specially qualified, as by reason of practice or teaching. Normally the applicant will be required to show a level of scholarship appreciably higher than that required for the first degree in law at the institution from which he received that degree. An exceptionally high record in law school and in the graduate study program is expected of those who aspire to a teaching career.

REQUIREMENTS FOR THE DEGREE OF MASTER OF LAWS

The degree of Master of Laws is reserved for students who, having demonstrated their capacity for graduate work in law, maintain a level

of scholarship substantially higher than that required for the degree of Bachelor of Laws.

The candidate for this degree is required to complete a course of study comprising not less than twenty nor more than twenty-six semester hours, or approved research equivalent thereto. Two full semesters are required for the completion of this program. A candidate for this degree is required to include in his course of study at least two of the following courses: International Law, Jurisprudence, and Legal History. Other suitable courses will be selected by the candidate subject to the approval of the Committee on Graduate Study. In addition to the minimum requirement of twenty semester hours, the candidate is required to submit an essay representing substantial research on a legal subject. This essay is to be prepared under the supervision of the instructor in charge of the field in which the research is done. The candidate will find it helpful to have formulated a project of research, or alternative projects, before his admission to graduate study or, at any rate, before pursuing his graduate study in residence. In appropriate cases the candidate will be encouraged to take related work in other departments of the University. Other courses of comparable content may be substituted for those listed. In special circumstances, credit not in excess of two hours per semester may be arranged for special, supervised research projects.

Doctor of Juridical Science

ADMISSION TO CANDIDACY FOR THE DEGREE OF DOCTOR OF JURIDICAL SCIENCE

Any person holding the degree of Master of Laws from this or any other law school which is qualified for membership in the Association of American Law Schools may, on vote of the Faculty, be admitted to candidacy for the degree of Doctor of Juridical Science, provided he completed the work for the Master's degree with distinction.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF JURIDICAL SCIENCE

Upon favorable recommendation of the Faculty, the degree of Doctor of Juridical Science will be conferred on students admitted to candidacy for that degree who complete and submit a monograph or series of essays suitable for publication and deemed by the Faculty to be of distinguished character and who pass an oral examination before a special committee appointed for that examination. At least one academic year, and, in the absence of an extension granted by the Faculty, not more than three years, must elapse between the award of the Master's degree and the award of the degree of Doctor of Juridi-

cal Science. Students who have received the degree of Master of Laws from another law school must spend at least two full semesters engaged in research at this School, and in addition may be required to complete a course of study prescribed by the Committee on Graduate Study. The monograph or series of essays required may be based upon, or be an extension of, the essay required for the Master's degree, provided substantial additional research is represented.

Post-Graduate and Refresher Courses

The School of Law provides instruction for students who desire refresher courses or who wish simply to complete a fourth year of law school work, regardless of whether they meet the requirements for admission to candidacy for graduate degrees. The successful completion of the courses taken by such students may be evidenced by certificate of the Dean.

Facilities and Activities



The Law School Building and Its Facilities

THE Law Building, like all other structures on the main campus of Duke University, is in Tudor Gothic style of colorful Cambrian stone from the Duke University quarries. In it are classrooms, seminar rooms, offices for Faculty and Staff, quarters for the Legal Aid Clinic and for the Duke Bar Association, a courtroom equipped for trial court and appellate court sessions, a student lounge, and the Law Library. For a description of dormitory accommodations, see page 15.

THE LAW LIBRARY

The Law Library, containing a collection of approximately one hundred thousand volumes, is one of the largest law school collections in the South. It consists of American and English statutory and case law; a collection of Continental law materials; treaties, digests, encyclopedias; the various selected case series; a comprehensive collection of legal periodicals; and publications in the fields of history, economics, government, and other social sciences, supplemental to the strictly legal materials. The Library receives every current legal periodical of general interest printed in the English language.

There are several thousand additional volumes of a legal nature in the main University library building, immediately adjoining the Law School, as well as the general collection of over a million volumes, to all of which the law students and Faculty have convenient access.

The Law Library is administered by a professionally trained staff and is open to the public daily throughout the year and in the evenings, as well, whenever the Law School is in session.

THE LEGAL AID CLINIC

A Legal Aid Clinic was organized at the School of Law in 1931 under the direction of Professor John S. Bradway. The purpose of the Clinic is to help the student acquire: professional self-confidence, a sense of professional responsibility, and professional self-control. To acquire self-confidence, the student participates in a series of practical activities, such as searching a title, preparing a real case for trial. To provide a sense of professional responsibility, a student, under supervision, confers with real clients who have real problems. These matters are carried to the best available conclusion. To acquire profes-

sional self-control, the student participates in a series of exercises designed to enable him to deal in an orderly fashion with innumerable details, which together, make up the sum total of law practice.

Specifically, the student learns how to gather and evaluate facts, how to plan a campaign at law, how to interview clients, how to run his own law office. To acquire proficiency in legal writing, the student prepares memorandums of law, a trial brief in real cases for lawyers in active practice and many other documents and letters. Instruction is individualized. Many of the problems require cooperation by the student on the interprofessional level with persons in other departments of the University and in the social welfare agencies in the city and the state.

Approximately seven hundred persons a year apply for services of the Clinic. Only those applicants who are unable to pay counsel fees, and only those cases where there is no opportunity for a contingent fee are accepted.

The activities of the Clinic are centered in a suite of offices in the Law School building, and in an interviewing office in the business center of Durham. In addition to the Director, a staff of five members of the North Carolina State Bar assists in the educational and supervisory activities of the Clinic and representing its clients in court proceedings.

Publications

LAW AND CONTEMPORARY PROBLEMS

The School of Law publishes a quarterly, *Law and Contemporary Problems*, edited by Professor Melvin G. Shimm. This periodical, now in its twenty-second volume, presents in each issue a symposium on a problem of current importance, in which the interrelated social and economic, as well as legal, factors are discussed by writers of competence in these respective fields. Where student research may contribute to the understanding of the legal aspects of such problems, student writings are accepted for publication.

The circulation of *Law and Contemporary Problems* extends not only to members of the legal profession and law libraries throughout the country, but also to industrial and financial concerns, governmental agencies, and public and general university libraries. Individual issues are not infrequently used as materials for study in university courses.

JOURNAL OF LEGAL EDUCATION

The *Journal of Legal Education*, a quarterly, is also edited at the School of Law under the direction of Professor Melvin G. Shimm. The publication serves as the organ for the Association of American Law

Schools, providing a clearing house for ideas and professional studies in the constantly expanding field of legal education. The editorial policy of the *Journal of Legal Education* is determined by an editorial board named by the Association, assisted by an advisory committee consisting of prominent legal educators and practicing attorneys.

DUKE BAR JOURNAL

The School inaugurated in 1950-1951 the publication of the *Duke Bar Journal*, published semi-annually, the material of which is written entirely by law students under Faculty supervision. This *Journal* affords a medium for student training in effective legal writing. Professor Shimm is Faculty advisor to the *Journal*.

Organizations and Activities

THE DUKE BAR ASSOCIATION

The Duke Bar Association was established in the spring of 1931. It is open to all the students of the Law School and is organized along the lines of the American Bar Association. Its purpose is to introduce the student to the problems considered by the bar in professional organizations and to develop professional consciousness and responsibility. A Faculty Committee on Student Affairs serves as general adviser to the student officers.

MOOT COURTS

A program of student Moot Court arguments is conducted under the supervision of the Faculty as a part of the courses in Research and Writing in which all students are required to participate.

AMERICAN TRUST COMPANY AWARDS

Since 1948-1949 the American Trust Company, Charlotte, North Carolina, has sponsored an annual will drafting contest in cooperation with the law schools of Duke University, University of North Carolina, and Wake Forest College. All students who are enrolled in these respective law schools, but who are not practicing or who have not actively practiced law, are eligible to participate. The two best entries from each school are awarded \$50. In addition the best entry from the three schools is awarded \$150 and the second best entry from the three schools \$50, so that the total prize awarded to the best draftsman amounts to \$200 and to the second best draftsman \$100.

EDWIN P. FRIEDBERG AWARD

Edwin P. Friedberg, a member of the Raleigh bar, awards annually a copy of the Commerce Clearing House Standard Federal Tax Reports for the current year to the graduating student who has done the best work in federal taxation while he has been in the Law School.

JAMES F. BYRNES SENATE PRIZE

Delta Theta Phi Foundation, Inc., through the James F. Byrnes Senate, awards each year to that member of the first-year class who has completed the work of the first year with the highest average a small plaque bearing his name and denoting the honor which he has attained. The winner's name is also inscribed on a larger, permanent plaque which hangs in the Law Building.

HUGHES' INN OF PHI DELTA PHI BOOK AWARD

An award of second-year first-semester textbooks is made annually by Hughes' Inn of Phi Delta Phi legal fraternity to a rising second-year student of Duke University Law School on the basis of overall merit of the student in his first year of law school study.

LAWYERS TITLE AWARD

Established in 1954 by the Lawyers Title Insurance Corporation of Richmond, Virginia, this prize of one hundred dollars will be awarded annually to that student attaining the highest average grade in the real property courses: Estates in Land, Conveyancing, and Future Interests.

ORDER OF THE COIF

A chapter of the Order of the Coif, national legal scholarship society, has been established at Duke University School of Law. Its purpose is "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship." Election is restricted to the ten per cent of the graduating class who have attained the highest rank in their law school work.

NATHAN BURKAN MEMORIAL COMPETITION

The American Society of Composers, Authors and Publishers (ASCAP) awards each year to students in this law school a first prize of \$150 and a second prize of \$50 for the two best papers on any phase of Copyright Law. Winning papers are considered for a National award of \$500.

WILLIS SMITH PRIZE

The late Willis Smith, for many years a prominent member of the Raleigh bar and Chairman of the Board of Trustees of Duke University, who was serving in the United States Senate at the time of his death, June 26, 1953, provided for over twenty years an annual award to that member of the graduating class of the Law School who had maintained the highest scholastic average during the entire three years of law school work. The prize consisted of a set of valuable books selected by the donor and the Dean. Mr. Smith's family has made arrangements to continue this prize in his memory.

In addition to the prizes and awards described above, prizes consisting of law books and other legal items are offered by various law books publishers to students meeting prescribed standards of accomplishment in certain fields.

RECREATIONAL FACILITIES

The University is located about two miles from the business district of Durham on wooded hills constituting part of the five-thousand-acre Duke Forest, which is maintained by the School of Forestry. Within a short distance from the campus are facilities for golf, horseback riding, and woodland hiking. Students of the Law School are entitled to the use of the University gymnasium, tennis courts, swimming pool, and similar privileges without cost. Motion pictures are shown in Page Auditorium twice a week, and concert programs, recitals, lectures, and plays are presented frequently.

Program of Instruction



The First-Year Program

All of the first-year courses listed below are required for graduation. A detailed description of these courses and the other courses listed under the Program of Instruction appears at pages 30 to 35 of this Bulletin.

	SEMESTER HOURS	
	Fall	Spring
Chattel Transactions	2	2
Contracts	3	3
Criminal Law and Procedure	3	
Research and Writing I	1	1
Torts	3	3
Civil Procedure I	3	
Business Associations I		3
Estates in Land		3
	—	—
	15	15

The Recommended Second-Year Program

The recommended second-year program is given below. Research and Writing II is required. Second-year students may substitute third-year courses for other second-year courses with the permission of the instructors in the substituted courses. However, a student omitting a second-year course from his second-year program may find himself unable to take that course in his third year because it may be scheduled at the same hour as a third-year course which he wishes to take.

	SEMESTER HOURS	
	Fall	Spring
Civil Procedure II	3	
Constitutional Law and Federal Courts	3	2
Research and Writing II [Required]	1	
Administrative Law		3
Business Associations II	3	
Conveyancing	3	
Restitution and Equitable Remedies		2
Negotiable Instruments	2	
Security		3
Federal Taxation I		3
Wills and Administration of Estates		2
	—	—
	15	15

The Third-Year Courses

Students are to select courses aggregating 10 to 15 hours each semester. Every student must select two of the starred courses listed below. These courses emphasize legal planning and drafting. Enrollment in each of them except Legal Aid Clinic is limited to 15. Legal Aid Clinic counts as a single starred course, though it is a year course. No student may take more than two starred courses in the same semester without the consent of the Dean and of the instructors in the starred courses involved.

I. BUSINESS

*Corporate Planning and Drafting	2	
Insurance		2
Debtors' Estates	3	
*Advanced Legal Accounting		2
*Securities Regulation (Not Offered 1957-1958)		2

II. ESTATES, FAMILY, PROPERTY

Family Law	2	
Future Interests	3	
Trusts	3	
Family Law Seminar		2
*Tax and Estate Planning		2
Federal Taxation II	3	

III. PROCEDURE, PRACTICE AND LOCAL LAW

Evidence	2	2
*Legal Aid Clinic	2	2
*Case Studies	1	
North Carolina Practice	2	
North Carolina Statutes and Decisions		2
Legal Ethics		1

IV. PUBLIC LAW

Federal Taxation II	3	
Labor Relations	3	
*Labor Law Seminar		2
Labor Standards		2
*Public Regulation of Business Seminar	3	
State Taxation		2
*Tax and Estate Planning		2
Conflict of Laws		3

V. OTHER COURSES

International Law		3
Jurisprudence	3	
Legal History		2

Description of Courses



Business Courses

ADVANCED LEGAL ACCOUNTING. The study and analysis, in more detail than in Business Associations II, of the balance sheet, the income statement, and the accountancy concepts and principles that serve as controls over corporate distributions; financial reporting and investor protection; trust and estate accounting; and some problems in accounting with respect to public utility regulations. Two hours a week second semester.

MR. LATTY

BUSINESS ASSOCIATIONS I. Legal principles concerning association in business by agency, partnership, other unincorporated forms and corporations. Creation, form and nature of agency, partnership and corporation, corporate existence (de facto corporations, corporate entity and its limitations), powers, duties, liabilities and compensation of agents, partners, officers and directors, risks in conduct of business by representatives (vicarious liability in tort, authority to contract), imputation of notice and knowledge, scope of enterprise (ultra vires), revocation and termination of authority, ratification, undisclosed business associates, stability of the associational relationship. The purpose of this course is to grasp basic principles of Agency and Partnership and related principles of corporation law. (The main basic study of corporation law, however, is in Business Associations II.) Three hours a week second semester.

MR. LATTY

BUSINESS ASSOCIATIONS II. Promoters, subscription to and issue of shares, stock structure and corporate capital, dividends, preferred stock, bonds, capital increases and reduction, corporate re-acquisition of own stock, elementary principles of corporate accounting, public issue of securities, stock transfers, fundamental corporate changes (recapitalization, sale, merger and consolidation, dissolution), stockholders' suits, and certain principles concerning management and operation not studied in Business Associations I. Three hours a week first semester.

MR. LATTY

CONTRACTS. The formation and legal operation of contracts in general, with attention to problems of drafting and counseling as well as of litigation and extrajudicial settlement. Legal and equitable remedies in contract cases, including damages, specific performance, and restitutionary remedies, and important procedural devices incident to such remedies. Three hours a week throughout the year.

MR. STANSBURY

CORPORATE PLANNING AND DRAFTING. The student is given hypothetical corporate problems (perhaps taken from the practicing lawyer's desk) on a client's proposed course of action; each problem is designed to require the student to grasp the business situation and goals involved, analyze for pertinent legal principles, plan the transaction to avoid legal and business (including taxation) pitfalls, plan the requisite steps to consummate the desired transaction, draft the appropriate papers and present his research. Two hours a week first semester.

MR. LATTY

SECURITY. Mortgage and security interests in real property, and suretyship. Three hours a week second semester.

MR. SHIMM

DEBTORS' ESTATES. Comparative study of methods used for the liquidation of debtors' estates. The non-bankruptcy materials cover individual creditors' rights by attachment, garnishment, execution, creditors' bills and the like; common law composition; and general assignments. The bankruptcy materials cover, in the

main, the first seven chapters of the Bankruptcy Act. Three hours a week first semester. MR. SHIMM

INSURANCE. The nature of "insurance"; state supervision and control; types of insurance organization; the legal requirement of insurable interest; interest of others than the named insured; the measure of indemnity and subrogation; the beneficiary's interest in life insurance; the insured event, and excepted causes; warranties, representations and concealment; the making of insurance contracts; waiver, estoppel and election. Two hours a week second semester. MR. PASCHAL

NEGOTIABLE INSTRUMENTS. Comparative study of the different types of commercial instruments, their different functions and legal incidents. Two hours a week first semester. MR. KRAMER

PUBLIC REGULATION OF BUSINESS SEMINAR. See Public Law Courses, page 33 for description. Three hours a week second semester. MR. LIVENGOOD

SECURITIES REGULATION. Regulation of distribution and marketing of securities and protection of the investor under the Securities Act of 1933, the Securities and Exchange Act of 1934, the Public Utility Holding Company Act of 1935 and the Trust Indenture Act of 1939, with summary treatment of other related federal legislation; the role of the Securities and Exchange Commission; a brief survey of state regulation. Considerable emphasis is placed on civil liabilities under the federal legislation. Two hours a week second semester. MR. LATTY
(Not offered in 1957-58.)

Property Courses

CHATTEL TRANSACTIONS. The course covers most of the topics generally treated under the heading of Personal Property, Bailment and Sales; application of the concepts of possession and title in the law of personal property and sales, with special attention to the judicial techniques with these concepts; the bailment relationship; artisan's lien; transfer of chattels by gift, sale and miscellaneous inter vivos transactions. In Sales, the emphasis is on enforcement of buyers' and sellers' rights and on sales financing. Two hours a week throughout the year. MR. LATTY

CONVEYANCING. Form and execution of deeds, description in deeds; rents, licenses, easements and profits; covenants and agreements running with the land at law and in equity; estoppel by deed; recording and title registration; aspects of public control of land use. Three hours a week first semester. MR. BOLICH

ESTATES IN LAND. Historical introduction to real property with a detailed consideration of the modern law of possessory estates, including the fee simple, the fee tail and its statutory substitutes, the life estate, the estate for years and other non-freeholds; concurrent ownership; equitable estates; types of future interests; waste; distribution of benefits and burdens as between owners of present and future interests. Three hours a week second semester. MR. BOLICH

FUTURE INTERESTS. Future interests in real and personal property; reversions; vested and contingent remainders; executory interests; rights of entry; possibilities of reverter; gifts to classes; powers; perpetuities; construction of wills and deeds as affecting the validity and characteristics of the interests created thereby. Three hours a week first semester. MR. BOLICH

TAX AND ESTATE PLANNING. Seminar devoted to problems and techniques of tax and estate planning. Federal Taxation I and Federal Taxation II and Future Interests are prerequisite to enrollment in the seminar. Enrollment limited. Two hours a week second semester. MR. BOLICH AND MR. LOWNDES

TRUSTS. The nature, creation and elements of a trust; transfer of the beneficiary's interest; administration of trusts; termination and modification of trusts; charitable trusts; liabilities to third persons; and liabilities of third persons. Three hours a week first semester. MR. LOWNDES

WILLS AND ADMINISTRATION OF ESTATES. Descent and distribution; property rights of surviving spouse, children and descendants; ancestors and collaterals; effect of claimant's misconduct. Making and revoking wills; testamentary capacity; execution of wills; holographic and special types; integration; testamentary character and intent; revocation; operation of legacies and devises. Probate and administration; grant of administration; probate and contest of wills; assets; contracts, sales and investments by personal representative; claims; settlement of the estate. Two hours a week second semester.

Public Law Courses

ADMINISTRATIVE LAW. The formulation of statutory schemes of administrative regulation; the organization of administrative agencies; the determination, promulgation and enforcement of administrative programs; the respective spheres of administrative and judicial responsibility; judicial control over administrative action. Practice and procedure before administrative agencies: informal conferences and negotiations; formal hearings; constitutional limitations. Three hours a week second semester.

MR. KRAMER

CONSTITUTIONAL LAW AND FEDERAL COURTS. Judicial protection against arbitrary governmental action; the history of the concept of a "higher law"; the constitutional clauses relied upon. The organization and jurisdiction of the federal courts; when and how judicial review can be invoked; limitations on governmental power with respect of economic matters, civil liberties and criminal and civil procedure. The powers of Congress, express and implied; limitations on State governmental powers resulting from the existence and from the exercise of Congressional powers. The constitutional questions involved in administrative law, conflict of laws, intergovernmental tax immunities, jurisdiction to tax, and state taxation of interstate commerce are covered more fully in other courses. Three hours a week first semester, two hours a week second semester.

MR. MAGGS

CRIMINAL LAW AND PROCEDURE. An introductory study of the law of crimes and the administration of criminal justice; analysis of the criminal act and the mental element in crime; consideration of specific offenses as defined by statute and the common law; discussion of typical defenses in relation to specific crimes; elementary criminal procedure; study of the Anglo-American penal system. Three hours a week first semester.

MR. LIVENGOOD

FEDERAL TAXATION I. An introduction to the federal taxation with particular emphasis on the federal income tax. The course is designed as a final course for students who do not intend to specialize in tax practice and as an introductory course for those who do. Three hours a week second semester.

MR. LOWNDES

FEDERAL TAXATION II. A more advanced course in federal taxation. The principal emphasis of the course is on the federal estate and gift taxes, and the relation of those taxes to the federal income tax. Three hours a week first semester.

MR. LOWNDES

INTERNATIONAL LAW. A survey of public international law of peace, as evidenced especially in decisions of national and of international courts; the drafting and interpretation of treaties; the nature and handling of international claims; the organization and jurisdiction of international tribunals, with special reference to the International Court of Justice; developments with respect to the codification of the law. Three hours a week second semester.

MR. WILSON

LABOR LAW SEMINAR. An intensive examination of significant problems in collective bargaining, union-management relations and labor dispute settlement, with emphasis upon the drafting and interpretation of contract clauses, theories and techniques in contract negotiation and grievance handling, voluntary arbitration and other procedures for the adjustment of disputes, and the interrelation of the legal and economic aspects of labor problems. Prerequisite: Labor Relations. Two hours a week second semester.

MR. LIVENGOOD

LABOR RELATIONS. A study of the law relating to collective bargaining and concerted labor activities, including the National Labor Relations Act and related legislation, the legal aspects of strikes, boycotts and picketing, the negotiation and administration of collective bargaining agreements, procedures for the settlement of labor disputes, and relations between the union and individual employees. Three hours a week first semester. MR. LIVENGOOD

LABOR STANDARDS. Government regulation of conditions of employment, including the Fair Labor Standards Act and other wage-hour and child-labor statutes, unemployment insurance and other social security legislation, employers' liability and workmen's compensation acts, and related laws establishing minimum standards for the creation, continuance and termination of the employment relationship. Two hours a week second semester. MR. LIVENGOOD

PUBLIC REGULATION OF BUSINESS SEMINAR. Intensive study of the federal antitrust laws and their common-law background, with emphasis on the economic policies involved. As a corollary of critical examination of the Sherman Act, Clayton Act, Federal Trade Commission Act and related legislation designed to enforce competition as the primary control of the economic system, some consideration is given to legal measures which supplement or replace competition, such as direct regulation of business and government intervention by public loans, guaranties and ownership. Three hours a week second semester. MR. LIVENGOOD

STATE TAXATION. Constitutional limitations on the taxing power; jurisdiction to tax; state excise taxes; and the general property tax. Two hours a week second semester. MR. LOWNDES

TAX AND ESTATE PLANNING. See Property Courses, page 31, for description. Two hours a week second semester. MR. BOLICH AND MR. LOWNDES

General Courses

CONFLICT OF LAWS. A study of the special problems which arise when the significant facts of a case are connected with more than one jurisdiction. Recognition and effect of foreign judgments; choice of law; federal courts and conflict of laws; the United States Constitution and conflict of laws. Three hours a week second semester. MR. KRAMER

FAMILY LAW. A seminar approach to the cases, statutes, and sociological theories covering the contract to marry, its formation and breach; marriage; annulment; divorce; separation; property rights; and international jurisdiction. Selected materials. Two hours a week first semester. MR. BRADWAY

SEMINAR IN FAMILY LAW. A seminar approach to the efforts of the social sciences, including the law, to deal with the intricate and perplexing problems of the modern family. Readings are assigned in legal and sociological material. Class discussions are based upon some central topic, such as divorce, domestic relations courts, etc. Written reports required in lieu of an examination. Family Law is prerequisite. Two hours a week second semester. MR. BRADWAY

JURISPRUDENCE. Discussion of some of the basic problems of classical and contemporary juristic theory, with applications to cases and statutes. Open to all graduate students, and, with the consent of the instructor, to qualified second and third year students. Three hours a week first semester. MR. KRAMER

LEGAL HISTORY. A study of the development of fundamental English and American legal institutions, with primary emphasis upon the establishment and growth of American law from the colonial period to the present. Two hours a week second semester. MR. BOLICH

NORTH CAROLINA STATUTES AND DECISIONS. A study of selected statutes of North Carolina with discussion of their application, and an analysis of the decisions of the Supreme Court of North Carolina construing them. Two hours a week second semester. MR. BRYSON

RESTITUTION AND EQUITABLE REMEDIES. A survey of equitable remedies in general (including enforcement of equity decrees) and of important parts of the fields of equity and restitution that are not covered in other courses. Two hours a week second semester.

MR. PASCHAL

TORTS. The bases of liability in damages for personal injuries and injuries to property; bases other than fault; negligence; intentional infliction of harm. Procedure in jury trials; proof of negligence; causation and "proximate cause"; defenses; the damages recoverable and equitable relief obtainable. Special rules applicable to occupiers and owners of land, motor vehicle accidents, suppliers of goods and remote contractors. Misrepresentation and fraud; defamation; assault and battery; false imprisonment. Three hours a week throughout the year.

MR. MAGGS

Procedure and Practice Courses

CASE STUDIES. Detailed analysis of an important civil suit, under supervision of a visiting instructor who was counsel therein. The instructor's files and the record and briefs will be studied. Consideration will be given to how the matter first arose and what business or other problems of the client were involved; how counsel first analyzed the matter and how he ascertained relevant facts; how counsel prepared for and conducted the trial and appellate proceedings. One hour a week first semester.

INSTRUCTOR TO BE ANNOUNCED

CIVIL PROCEDURE I. An introduction to judicial administration and the interrelationship of the federal and state court systems; pleading in civil actions at common law and under the modern codes with emphasis on the Federal Rules. Three hours a week first semester.

MR. PASCHAL

CIVIL PROCEDURE II. Parties to a civil action; right to jury trial; the division of function between court and jury; instructions; jurisdiction; res judicata; appellate procedure. Three hours a week first semester.

MR. PASCHAL

EVIDENCE. A study of the common-law rules of evidence, including the requirements of relevancy and materiality; competency and privilege of witnesses, examination and cross-examination, burden of proof and presumptions, judicial notice, and functions of judge and jury. Two hours a week throughout the year.

MR. STANSBURY

LEGAL AID CLINIC. This course is designed to develop in the student professional self confidence, responsibility to the program of the organized bar, professional self control. During the first semester the student learns to: interview a client in an orderly manner, determine the gaps in the client's story and fill in these gaps with information from other proper sources; evaluate facts; make a record of facts including the documents used for the purpose; diagnose a case for legal "symptoms" and develop legal theories; organize research; plan a campaign at law. The class becomes familiar with the courthouse as a source of facts; and with a law office as a place in which a lawyer functions. Special exercises like searching a title to real estate, preparing a criminal case for trial, are assigned. During the second semester the student learns to conclude a case in an orderly professional manner by education; by conciliation; by litigation. The climax is a jury trial with expert witnesses. The students operate under the supervision of a staff member throughout the year. Students are assigned to duty in rotation in the Legal Aid Clinic office and in the downtown office. This gives them a chance to interview flesh and blood clients and to see the progress of real cases. By preparing trial briefs in court and criminal cases the student learns how to get ready for his appearance in the court room. Two hours a week throughout the year.

MR. BRADWAY

LEGAL ETHICS. A seminar approach to the ethical problems of the lawyer and the profession. Readings are assigned in legal biography, law reform, the history of the profession, legal aid work. Class discussions cover canons of ethics, statutes, cases, and opinions of grievance committees dealing with the daily problems of the practicing lawyer. A written report is required on some phase of the reform of the administration of justice. One hour a week second semester

MR. BRADWAY

NORTH CAROLINA PRACTICE. A study of the steps in a civil action at law from the issuance of process to the entry of final judgment including service of process; appearance and waiver of process; selecting the jury; various motions made during the trial; submission of case to jury; verdict; judgment; noting and perfecting appeal. Also included are such topics as jurisdiction of various courts in North Carolina; venue; trials without a jury; provisional remedies and special proceedings. Two hours a week first semester.

MR. BRYSON

Legal Research and Writing

RESEARCH AND WRITING I. Classroom instruction and individual problems in the use of law books, the preparation of memorandums of law, and moot court briefing and argument. The first year of a two-year program designed to familiarize the student with the materials and methods of legal research and legal writing. Two semester-hours credit.

MESSRS. BRYSON, BRADWAY,
KRAMER, AND PASCHAL

RESEARCH AND WRITING II. The second year of the two-year program of research and writing. In addition to more advanced work of the kind involved in the first-year program, the student will assist in evaluating the work of first-year students and in judging first-year moot court arguments. Required of all second-year students. One semester-hour credit.

MESSRS. BRYSON, BRADWAY,
AND PASCHAL

Upon recommendation of the Committee on Graduate Study, seminars not listed in the Bulletin may be created or arrangements made for supervision of special research by individual graduate students in any subject.

All matters presented in this Bulletin are subject to change as the University or the School of Law may deem expedient.

Enrollment 1956-1957



First Year

Abernathy, Frank Henry (Duke University), Portsmouth, Virginia
Allen, Cameron Harrison (Otterbein College), Springfield, Ohio
Bartels, Roger (Middlebury College), Garden City, New York
Baxter, Robert Clifton (Elon College), Burlington, North Carolina
Beck, Leif Christian (Duke University), Silver Spring, Maryland
Berger, Robert Benjamin (Duke University), Coalgood, Kentucky
Capozzi, Salvatore Joseph (Kenyon College), Locust Valley, New York
Chauncey, Harrison Kirk (Rollins College), Durham, North Carolina
Donahoe, George Douglas (Western Carolina College), Durham, North Carolina
Emerson, Jack Terry (Elon College), Tryon, North Carolina
Fish, Konrad Karl (Duke University), Hempstead, New York
Goodman, Arthur (Duke University), Charlotte, North Carolina
Greenberg, Arnold Elliot (Duke University), Lawrence, New York
Guthrie, Rex Beach (Wofford College), Manteo, North Carolina
Haffner, Robert Saul (Brooklyn College), Brooklyn, New York
Hammond, John Anson (Middlebury College), Edgewood, Rhode Island
Harrell, Philip Van (University of North Carolina), Durham, North Carolina
Harris, Eugene Starke (Duke University), Pine Bluff, Arkansas
Helwick, William Robert (Iona College), Yonkers, New York
Hudson, Robert Carnahan (University of Arkansas), Pine Bluff, Arkansas
Hutchins, Robert White (Duke University), New Bern, North Carolina
Joyner, Archie Braswell (Davidson College), Greensboro, North Carolina
Karahalios, Tom (Florida Southern College), Evanston, Illinois
Lack, John Joseph (Duke University), Camden, New Jersey
Metz, Robert Henry (Rutgers University), Morrisville, Pennsylvania
Moore, Terrance Gee (Duke University), Salem, Ohio
Nemerov, Richard Gerson (Washington College), New York, New York
Newman, David Charles (Duke University), Cape Girardeau, Missouri
Oakes, Thomas Burrett (Yale University), Arlington, Virginia
O'Connor, Harry Joseph (North Carolina State College), Greensboro, North Carolina
Park, Daniel Joseph (Duke University), Elkin, North Carolina
Plunkett, Charles England (Hendrix College), Camden, Arkansas
Poteat, John Rumney (Denison University), Louisville, Kentucky
Russell, John Carl (Duke University), Rocky Mount, North Carolina
Seaford, Hurley Neil (Davidson College), Concord, North Carolina
Sondee, Ronald William (DePauw University), Waukegan, Illinois
Sotel, Phillip Kirban (Duke University), Garden City, New York
Still, Gerald Maxwell (Clark University), New Haven, Connecticut
Strasser, Bernard Harold (Arizona State College—Tempe), Ormond Beach, Florida
Sumpter, William (Ohio Wesleyan), Ashland, Kentucky
Taylor, James Godwin (Wake Forest), Snow Hill, North Carolina
van den Berg, Egerton King (United States Military Academy), Washington, D. C.
Wagon, William Macbeth (The Citadel), Charlotte, North Carolina
Walker, Julian Wilson (University of the South), Charleston, South Carolina
Wax, Darold Duane (State College of Washington), Mansfield, Washington
Webster, John Harry (Lehigh University), Bethlehem, Pennsylvania
Westbrook, James Edwin (Hendrix College), Camden, Arkansas
White, William Dunlop (Duke University), Lexington, North Carolina
Williams, Arthur Clay (Duke University), Belleville, Illinois

Second Year

Auwaerter, John Floyd (Duke University), Winfield, Illinois
Bogart, Larry Evans (University of Georgia), Atlanta, Georgia
Brooks, Leonard Howard (Duke University), Wilson, North Carolina
Burrus, Robert Lewis, Jr. (University of Richmond), Lahore, Virginia
Butrym, Robert Earl (Duke University), McKeesport, Pennsylvania
Caffrey, William Daniel (George Washington University), Greensboro, North Carolina
Cameron, David Pierre Guyot, Jr. (Yale University), Miami, Florida
Capepper, John Shepard, Jr. (University of Tennessee), Jacksonville, Florida
Daspin, Michael Jerome (Clark University), New York, New York
Denison, Richard Lindsey (Duke University), Winston-Salem, North Carolina
Dodge, Eric (Norwich University), Loudonville, New York

Ergo, Richard Walter (Northwestern University), Chicago, Illinois
 Evans, Richard Craven (University of Michigan), Mt. Morris, Michigan
 Fischer, August William (Rutgers University), Lake Erskine, New Jersey
 Frost, Oakley Caldwell (Duke University), Greensboro, North Carolina
 Grigg, William Humphrey (Duke University), Albemarle, North Carolina
 Hartel, Arthur Paul, Jr. (Duke University), New York, New York
 Henry, Jesse Dalbert (City College of New York), New York, New York
 Kintz, George Jerome (Duke University), Kingston, Pennsylvania
 Lee, William Osbourne (University of North Carolina), Lumberton, North Carolina
 Lowndes, John Foy (Duke University), Durham, North Carolina
 McCartha, Cornelius Eugene (Michigan State College), Charleston, South Carolina
 McCracken, William Tignal (Duke University), Henderson, North Carolina
 Magidoff, Jerome (Duke University), Brooklyn, New York
 Moore, Edward Blake (College of Wooster), Sewanee, Tennessee
 Oden, William Kellam, Jr. (Guilford College), Greensboro, North Carolina
 Partain, Eugene Gartley (Duke University), Paragould, Arkansas
 Pleasants, Donald Adair (Augustana College), Rock Island, Illinois
 Pope, Calvin Adams (Duke University), Durham, North Carolina
 Rieck, Edward Ernest (Amherst College), Pittsburgh, Pennsylvania
 Schaefer, Everett Gordon, Jr. (Lehigh University), Glen Ridge, New Jersey
 Schaffer, Richard White (Duke University), Arlington, Virginia
 Sparks, William Donald (Drew University), Chester, Pennsylvania
 Sterling, John Robert (Miami University), Pleasant Ridge, Michigan
 Stewart, Robert Drake (Duke University), Charlotte, North Carolina
 Taylor, Alvin Elliott (Clark University), Deering, New Hampshire
 Taylor, George Franklin, Jr. (Duke University), Henderson, North Carolina
 Thayer, Frederick Augustus, III (College of Wooster), Oakland, Maryland
 Tennent, Frank Dewey (University of Michigan), Sturgis, Michigan
 Walsh, Walter Vincent, Jr. (Yale University), Katonah, New York
 Williamson, Malcolm Russell, Jr. (Davidson College), Charlotte, North Carolina

Third Year

Ayres, John D., Jr. (Florida State University), Dothan, Alabama
 Beber, Robert H. (Duke University), Bronx, New York
 Bradshaw, Robert Wallace, Jr. (Duke University), Wilson, North Carolina
 Brooks, Eugene Clyde, III (Duke University), Durham, North Carolina
 Chipman, David Ross (Carleton College), Chapel Hill, North Carolina
 Curtiss, Franklin (Brown University), Sheffield, Massachusetts
 Dickman, Irwin Lawrence (Clark University), Brooklyn, New York
 Drummond, Winslow (College of Wooster), Clarksville, Arkansas
 Dukes, Charles Aubrey, Jr. (Duke University), Durham, North Carolina
 Dyer, Ernest Wilson (University of Michigan), St. Clair Shores, Michigan
 Evans, Merle Devere, Jr. (Duke University), Massillon, Ohio
 Friedman, David Aaron (Duke University), Trenton, New Jersey
 Gallo, Louis Thomas (Rutgers University), East Paterson, New Jersey
 Glaze, Richard Edward (Duke University), Orlando, Florida
 Hackett, George William (Alfred University), Friendship, New York
 Halio, Elliott T. (Syracuse University), Charleston, South Carolina
 Huggins, Theodore Pollard (Duke University), Danville, Virginia
 Janello, Kenneth Andrew (Tufts College), Bridgeport, Connecticut
 Knickerbocker, Donald Cushing (Duke University), Cincinnati, New York
 Kostelnik, Bernard Michael (Lehigh University), Bethlehem, Pennsylvania
 Leggio, Anthony Joseph (Duke University), Woodhaven, New York
 Loomis, Horace Buel, III (Western Michigan College), Charlotte, Michigan
 Louis-Dreyfus, William Gerard (Duke University), New York, New York
 Moore, Milburn Marvin (Wayne University), Detroit, Michigan
 Petree, Robert Graham (American University), Silver Spring, Maryland
 Pizer, Edward Paul (Duke University), Raleigh, North Carolina
 Robinson, Harvey Ruddy (Geneva College), Freedom, Pennsylvania
 Savitt, Herbert Saul (Duke University), Ansonia, Connecticut
 Schwartz, Richard Tobias (Duke University), Jersey City, New Jersey
 Swiggett, Robert Horace, Jr. (Guilford College), Greensboro, North Carolina
 Taylor, Robert Worth (Duke University), Jenkintown, Pennsylvania
 Tjoflat, Gerald Bard (University of Virginia), Cincinnati, Ohio
 Wagner, Robert Charles (Duke University), Irvington, New Jersey
 Walsh, Stephen Drake (Lafayette College), North Plainfield, New Jersey

Graduate Students

Everett, Robinson Oscar (University of North Carolina, Harvard University, Harvard Law School), Durham, North Carolina
 Gibbons, Gerald Robert (Duke University, Duke University School of Law), Utica, New York

Unclassified

Galifianakis, Nick (Duke University, Duke University School of Law), Durham, North Carolina
Kim, Yong Jay (Meiji University, Law College of Meiji University), Seoul, Korea
Torek, Albert Franz (Johns Hopkins University, University of Maryland Law School), Durham, North Carolina

Duke University School of Law

Publishes

Law and Contemporary Problems

Each issue of this publication is devoted to a symposium exploring not only the legal but also the economic and other social-science aspects of current problems that cross the lawyer's desk.

Symposiums published or to be published in 1957 include

Narcotics

River Basin Development: Its Concept and Law

River Basin Development: Its Practice

Radio and Television



\$2.00 per issue, postpaid.

\$5.00 per volume of four issues, subscription rate.



Law and Contemporary Problems

DUKE STATION

DURHAM, N. C.

BULLETIN
OF
DUKE UNIVERSITY



The Divinity School

ANNOUNCEMENTS FOR 1957-1958

VOLUME 29

MAY, 1957

NUMBER 7

Annual Bulletins

For GENERAL BULLETIN of Duke University, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF UNDERGRADUATE INSTRUCTION, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE COLLEGE OF ENGINEERING, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES, apply to *The Dean of the Graduate School*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF FORESTRY, apply to *The Dean of the School of Forestry*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF LAW, apply to *The Dean of the School of Law*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF MEDICINE, apply to *The Dean of the School of Medicine*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF NURSING, apply to *The Dean of the School of Nursing*, Duke University, Durham, N. C.

For BULLETIN OF THE DIVINITY SCHOOL, apply to *The Dean of the Divinity School*, Duke University, Durham, N. C.

For BULLETIN OF THE SUMMER SESSION, apply to *The Director of the Summer Session*, Duke University, Durham, N. C.

Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

BULLETIN
OF
DUKE UNIVERSITY



THE DIVINITY SCHOOL

1956-57

ANNOUNCEMENTS FOR 1957-58

DURHAM, NORTH CAROLINA

1957

Calendar



1957

September 16	Monday, 9:00 A.M.—Dormitories open for occupancy. 2:30 P.M.—Orientation program for new students. 4:00 P.M.—First regular Faculty meeting.
September 17	Tuesday, 9:00 A.M.-1:00 P.M.—Registration of new students. 2:00 P.M.-5:00 P.M.—Registration of returning students. 6:30 P.M.—Physical examinations of all new students, Duke Hospital.
September 18	Wednesday, 9:00 A.M.-1:00 P.M.-2:00 P.M.-3:00 P.M.—Registration of returning students. 2:00 P.M.-5:00 P.M.—Placement tests for all new students.
September 19	Thursday, 8:30 A.M.—Instruction begins for fall semester. 10:30 A.M.—Formal opening exercises.
September 25	Wednesday—Required meeting of first-year students with Dean
September 27	Friday—Last day for changing courses for fall semester.
November 27	Wednesday, 5:30 P.M.—Thanksgiving Recess begins.
December 2	Monday, 2:00 P.M.—Thanksgiving Recess ends.
December 11	Wednesday—Founders' Day.
December 20	Friday, 5:30 P.M.—Christmas Recess begins.

1958

January 6	Monday, 2:00 P.M.—Instruction is resumed.
January 8, 9, 10	Wednesday, Thursday, and Friday—Registration of resident students for second semester.
January 14	Tuesday—Mid-year examinations begin.
January 24	Friday—Mid-year examinations end.
January 27	Monday—Registration for second semester of students not in residence during first semester.
January 29	Wednesday, 8:30 A.M.—Second semester begins.
February 7	Friday—Last day for changing courses for second semester.
March 21	Friday, 5:30 P.M.—Spring vacation begins.
March 31	Monday, 2:00 P.M.—Instruction is resumed.
April 9	Wednesday, 7:00 P.M.—English Bible examination in Old Testament.
April 17	Thursday, 7:00 P.M.—English Bible examination in New Testament.
May 19	Monday—Final examinations begin.
May 29	Thursday—Final examinations end.
May 31	Saturday—Commencement begins.
June 1	Sunday, 11:00 A.M.—Commencement Sermon. 7:30 P.M.—Divinity School Closing Exercises.
June 2	Monday—Commencement Address, Graduating Exercises.
June 3-6	Christian Convocation.

Officers of Administration



General Administration

ARTHUR HOLLIS EDENS, Ph.D., LL.D.
President of Duke University

WILLIAM HANE WANNAMAKER, A.M., Litt.D.
Vice-Chancellor of the University

PAUL MAGNUS GROSS, Ph.D.
Vice-President in the Educational Division

CHARLES EDWARD JORDAN, A.B., LL.D.
*Vice-President in the Division of Public Relations,
and Secretary of the University*

HERBERT JAMES HERRING, A.M., LL.D.
Vice-President in the Division of Student Life

ALFRED SMITH BROWER, A.B.
Business Manager and Treasurer

GERHARD CHESTER HENRICKSEN, M.A., C.P.A.
Comptroller and Assistant Treasurer

COMMITTEE OF THE BOARD OF TRUSTEES ON THE DIVINITY SCHOOL

CHARLES P. BOWLES, W. W. PEFIE, H. B. PORTER, N. E. EDGERTON, E. H. NEASE, SR.

Educational Administration

JAMES CANNON, (1919) A.M., Th.M., D.D., LL.D.
Dean of the Divinity School

HELEN MILDRED KENDALL, (1950) A.B.
Administrative Assistant and Secretary of the Faculty

DONN MICHAEL FARRIS, (1950) B.D., M.S. in L.S.
Librarian

ARLEY JOHN WALTON, (1948) B.S.L., D.D.
Director of Field Work

Staff

SUE DAIL ALEXANDER
Secretary to the Dean

IMO JEANE ALLEN WOLF
Receptionist and Secretary

MARGARET GRIGG, A.B.
Assistant to the Librarian

Faculty Secretaries

MARY ANN SEARS, B.S., HELEN HODGES, A.B., PEGGY McCORD

Faculty



JAMES CANNON, (1919) A.M., Th.M., D.D., LL.D.
*Dean of the Divinity School and Ivey Professor of the History of
Religion and Missions*

HUGH ANDERSON, (1957) M.A., B.D., Ph.D.*
Associate Professor of Biblical Theology

WALDO BEACH, (1946) B.D., Ph.D.
Professor of Christian Ethics

WILLIAM HUGH BROWNLEE, (1950) Th.M., Ph.D.
Associate Professor of Old Testament

JOHN WILLIAM CARLTON, (1955) B.D., Ph.D.
Assistant Professor of Preaching

KENNETH WILLIS CLARK, (1931) B.D., Ph.D.
Professor of New Testament

JAMES T. CLELAND, (1945) M.A., S.T.M., Th.D., D.D.
James B. Duke Professor of Preaching

ROBERT E. CUSHMAN, (1945) B.D., Ph.D.
Professor of Systematic Theology

RUSSELL L. DICKS, (1948) B.D., D.D., Litt.D.†
Professor of Pastoral Care

ANDREW DURWOOD FONER, (1954) B.D., Th.D.
Assistant Professor of Theology and Philosophy of Religion

FRANKLIN SIMPSON HICKMAN, (1927) A.M., S.T.B., Ph.D., D.D.
Professor Emeritus of Psychology of Religion

WILLIAM ARTHUR KALE, (1952) B.D., D.D.
Professor of Christian Education

HELEN MILDRED KENDALL, (1950) A.B.
Administrative Assistant and Secretary of the Faculty

CREIGHTON LACY, (1953) B.D., Ph.D.
Associate Professor of Missions and Social Ethics

HIRAM EARL MYERS, (1926) S.T.M., D.D.
Professor of Biblical Literature

RAY C. PETRY, (1937) Ph.D., LL.D.
Professor of Church History

VERGIL ERWIN QUEEN, (1956) B.D.
Lecturer in Church Administration

JAMES LIGON PRICE, JR., (1952) Ph.D.‡
Visiting Associate Professor of Biblical Theology

EDWIN KELSEY REGEN, (1951) B.D., D.D.
Lecturer in Church Administration

* Tenure begins Sept. 1, 1957.

† On sabbatical leave, fall semester, 1956-57.

‡ Tenure ends Aug. 1, 1957.

McMURRY SMITH RICHEY, (1954) B.D., Ph.D.
Assistant Professor of the Philosophy of Christian Education

GILBERT THEODORE ROWE, (1928) S.T.D., D.D., Litt.D.
Professor Emeritus of Christian Doctrine

JOHN JESSE RUDIN, II, (1945) B.D., Ph.D.
Associate Professor of Speech

THOMAS ANTON SCHAFER, (1950) B.D., Ph.D.*
Assistant Professor of Historical Theology

HILRIE SHELTON SMITH, (1931) Ph.D., D.D., Litt.D.
James B. Duke Professor of American Religious Thought

HERSEY EVERETT SPENCE, (1918) A.M., B.D., D.D., Litt.D.
Professor Emeritus of Religious Education

WILLIAM FRANKLIN STINESPRING, (1936) M.A., Ph.D.
Professor of Old Testament

ARLEY JOHN WALTON, (1948) B.S.L., D.D.
Professor of Church Administration and Director of Field Work

PAUL YOUNG, (1956) M.A.
Lecturer in Church Music

MILTON P. BROWN, (1955) B.D.
Teaching Fellow in New Testament Greek

LOUIS HODGES, (1957) B.D.
Assistant in Preaching

Committees of the Faculty

Committee Chairmen consult with the Dean

Admissions and Academic Standing: Kendall, Clark, Walton, Kale, Petry, Carlton.

Advisors to Students: Foster, Cushman, Walton, Lacy, Rudin.

Alumni: Richey, Myers, Carlton.

Chapel Services and Spiritual Life: Cushman, Rudin, Stinespring, Richey, Brownlee.

Curriculum and Senior Seminars: Petry, Stinespring, Kendall, Cushman, Kale.

Divinity School Bulletin: Cleland, Brownlee, Carlton, Foster, Schafer.

Divinity School Seminars: Clark, Kale, Cushman, Brownlee, Stinespring.

Library: Stinespring, Foster, Lacy, Farris, Anderson.

Public Exercises: Smith, Beach, Cleland, Dicks, Brownlee.

Registration: Kendall, Stinespring, Beach, Rudin, Kale, Carlton, Schafer.

Schedule: Kendall, Schafer, Petry.

Social: Clark, Kale, Stinespring, Carlton, Kendall, Anderson.

JOINT AND SPECIAL COMMITTEES

Convocation: Kale, Foster, Walton, Rudin, Schafer.

James A. Gray Lectures: Cleland, Beach, Smith, Petry, Anderson.

School for Supply Pastors: Kale, Richey, Walton, Lacy.

Joint Summer Session Committee: Petry, Kendall, Clyde.

* On sabbatical leave, 1956-57.

General Information



HISTORICAL STATEMENT

THE Indenture of Trust signed on December 11, 1924, by Mr. James B. Duke, which established Duke University, mentioned first among its objects the training of ministers of the Gospel. The Divinity School was, accordingly, the first of the graduate professional schools to be organized. Its work began with the year 1926-27, the formal opening exercises being held on November 9, 1926.

The Reverend Doctor Edmund Davison Soper was the first dean of the Divinity School. He resigned in 1928 to become President of Ohio Wesleyan University, and was succeeded by the Reverend Doctor Elbert Russell, and the latter in turn in 1941 by the Reverend Doctor Paul Neff Garber. In 1944, Dean Garber was elected to the episcopacy of the Methodist Church, and Doctor Harvie Branscomb assumed the duties of the dean's office. In 1946, Dean Branscomb became Chancellor of Vanderbilt University, and in 1947 the Reverend Doctor Paul E. Root was elected dean but died before he could assume the office. The Reverend Doctor Harold A. Bosley became dean in 1947 and resigned in 1950 to become the pastor of the First Methodist Church, Evanston, Ill. The Reverend Doctor James Cannon was appointed Dean of the Divinity School March 1, 1951.

THE PURPOSE OF THE DIVINITY SCHOOL

The primary purpose of the Divinity School is to provide training for individuals planning to enter the Christian ministry. This includes not only prospective ministers in local churches, but also those preparing themselves to be missionaries at home and abroad, directors of Christian Education, teachers of religion, chaplains, and social workers. Vital to all of these forms of service is a full understanding of the beginnings, content, and history of the Christian faith and its special pertinence for the spiritual needs of the modern world. Studies of a broad and thorough character directed toward such an understanding constitute the center of the curriculum of the Divinity School and are regarded as the basic training for all prospective Christian workers. Specific training in the skills required of local ministers and of leaders in the work of Christian Education are also provided. As funds become available for the purpose and as needs appear, additional training in specialized skills and areas of knowledge will be added to the curriculum.

Bound by ties of history and obligation to the Methodist Church, the Divinity School is ecumenical in its interests and outlook. Its faculty is limited to no one denomination, but draws upon the resources of them all. Students of the several denominations are admitted on the same basis. The Divinity School conceives its task to be one of broad service to the Church in all of its forms.

THE RELATION OF THE DIVINITY SCHOOL TO DUKE UNIVERSITY

The Divinity School is an integral unit of the University and shares fully in its activities, privileges, and responsibilities. The Sunday services in the University Chapel give Divinity School students an opportunity to hear each year a number of leading ministers of the country. The University Libraries make easily accessible a rich collection of 1,275,000 volumes. Selected courses in the Graduate School of Arts and Sciences and in the professional schools are open to Divinity School students without payment of additional fees. The general cultural and recreational resources of the University are available to them on the same basis as to other students.

LIBRARY RESOURCES

The Divinity School has its own newly remodelled library containing over eighty thousand volumes. It is rich in complete files of the more important religious journals and periodicals, in source materials, particularly for the study of medieval and American church history, Judaism, missions and the history of religion, and in facsimiles of the more important manuscripts of the New Testament. Among the most treasured possessions of the Library are twenty-three Greek manuscripts of the eleventh to seventeenth centuries. Fourteen are Greek New Testament, of which one is a magnificent manuscript of the thirteenth or fourteenth century, containing the entire text of the New Testament; four are liturgical manuscripts containing material valuable for studies in the New Testament and church history.

The combined libraries of the University contain over 1,275,000 volumes. The General Library of the University is connected by a corridor with the Divinity School Building. It contains more than eight hundred thousand volumes and receives the current issues of over four thousand periodicals, more than two hundred and fifty of which are in the field of religion. The General Library contains also a catalogue of the library of the University of North Carolina located at Chapel Hill, twelve miles away, and a system of exchange operates between the two libraries, so that books may be secured from that library also within a few hours.

The Henry Harrison Jordan Loan Library was endowed in 1947 by the children of the late Reverend Henry Harrison Jordan, for the pur-

pose of providing ministers in the field with the best of current religious literature. This collection was an outgrowth of the Duke Divinity School Loan Library established in 1944.

RELIGIOUS AND SOCIAL LIFE

One of the most important aspects of a program of training for religious service is the development of a warm and discriminating spiritual experience. The center of the corporate life of the Divinity School is its own place of worship, York Chapel. Regular chapel services are held, at which all students are expected to be present. Services are led by members of the faculty, by visiting ministers, and by members of the student body. Several prayer groups are held in the dormitories weekly and special groups during the Lenten Season. Two Retreats are held each year. Ordination and other special services are held upon occasion. On each Sunday morning services are held in the University Chapel.

In 1952 the Doris Duke Foundation gave funds for the purchase and installation of a pipe organ in York Chapel.

The student body of the Divinity School is united by a strong sense of fellowship and common interest. Student committees organize and supervise social projects and missions of preaching, jail visitation, and related enterprises. Opportunities for occasional preaching are always available.

PUBLIC LECTURES

The Divinity School presents a number of public lecturers annually. The lecturers for 1956-57 were Dr. John Baillie, late of New College, Edinburgh, and Visiting Professor at Union Theological Seminary, New York; Dr. John Dillenberger, Professor of Theology, Harvard Divinity School; Dr. Frank Laubach, missionary and Special Counsellor to the Committee on World Literacy; Dr. Randolph Crump Miller, Professor of Christian Education of the Yale Divinity School; Dr. James Muilenberg, Davenport Professor of Hebrew and the Cognate Languages at Union Theological Seminary, New York; Dr. Carl Ernst Sommer, President of the Methodist Seminary at Frankfurt, Germany; and from the Methodist Board of Missions, Dr. Tracey Jones, Secretary for Southeast Asia; Dr. George Way Harley, of Ganta, Liberia, and Dr. M. O. Williams, Jr., Secretary of Missionary Personnel.

THE DIVINITY SCHOOL LIBRARY LECTURES

In 1948 the Duke Divinity School Library Lectures were established by the Reverend George Brinkmann Ehlhardt for the purpose of bringing to the Divinity School a succession of great religious leaders. The following lecturers have appeared:

1948: Dr. William Warren Sweet. 1949: Dr. George Dunbar

Kilpatrick. 1949: Dr. Wilhelm Pauck. 1950: Dr. John Cecil Trever. (This lecture was given in connection with the exhibition of three ancient Hebrew scrolls lent by His Eminence, Mar Athanasius Yeshue Samuel, Metropolitan and Archbishop of Jerusalem and Trans-Jordan.) 1951: Bishop Paul Neff Garber. 1953: Dr. Roland H. Bainton. 1955 (spring): Dr. Mary Ely Lyman. 1955 (fall): Dr. Kenneth Willis Clark. 1956: Dr. Maldwyn Edwards.

THE JAMES A. GRAY LECTURES

The James A. Gray Lectures were established in 1950, and the first series was given by Dr. Ralph W. Sockman, pastor of Christ Church (Methodist) of New York, during The Christian Convocation. The second series of these lectures was given at the 1951 Convocation by Dr. Paul E. Scherer of Union Theological Seminary, New York. The third series was given at the Convocation of 1952 by Dr. Liston Pope, Dean of Yale Divinity School. Dr. Charles W. Gilkey, Dean Emeritus of the Chapel of the University of Chicago, delivered the fourth series at the 1953 Convocation. Dr. Henry P. VanDusen, President of Union Theological Seminary, New York, was the lecturer in 1954. Dr. George Hedley, Chaplain of Mills College, California, was the lecturer in 1955. Dr. John Knox of Union Theological Seminary, New York, was the lecturer in 1956. Bishop Gerald H. Kennedy was the lecturer in 1957.

THE CHRISTIAN CONVOCATION

The Christian Convocation of 1957 was held on the Duke Campus from June 4-7. The Convocation, under the joint sponsorship of the Duke Divinity School, The North Carolina Pastors' School, and The Department of In-Service Training of the Board of Education of the Methodist Church, brought to the campus an outstanding group of religious leaders as lecturers and teachers. Bishop Gerald H. Kennedy delivered the seventh series of the James A. Gray Lectures; Dr. David A. MacLennan was Convocation Preacher.

COURSES OF STUDY OFFERED BY THE DIVINITY SCHOOL

The Divinity School offers two courses of study. The basic course is that which leads to the degree of Bachelor of Divinity. This is a three-year course and is recommended to all those preparing themselves for the work of the regular pastoral ministry. Students who hold pastoral charges, or other remunerative work requiring any substantial time apart from their studies, may carry only reduced schedules of work, and, in most cases, unless work is taken in the Duke University Summer Session, will spend four years in completion of the requirements for the B.D. degree.

The Divinity School offers also a course of study leading to the degree of Master of Religious Education. This course is designed for

individuals who wish to become directors or to take other specialized positions in the work of Christian Education. The course does not provide a general preparation for the work of the regular ministry and cannot serve as a substitute for it. No exchange of credits between the two courses is permitted, nor can departmental courses taken be credited toward more than one degree. Only a limited number of candidates for the Master of Religious Education degree will be accepted annually.

The requirements for each of these degrees are stated on pages 15 through 24 of this catalogue.

COURSES OF STUDY IN RELIGION OFFERED BY THE GRADUATE SCHOOL OF ARTS AND SCIENCES

Students who desire to pursue work in religion beyond that for the Bachelor of Divinity degree should register in the Graduate School of Arts and Sciences, through which the degrees of Master of Arts and Doctor of Philosophy in Religion may be obtained. This advanced work is administered through the Department of Religion of the Graduate School and is available to qualified persons of all denominations on an equal basis. Study and research may be pursued in three fields: (1) Biblical Studies; (2) Historical Studies, and (3) Systematic and Contemporary Studies. A list of courses approved by the Graduate Faculty for work in these fields, together with general requirements for admission to the Graduate School, may be found in the *Bulletin of the Graduate School*. This Bulletin is available on application to the Dean of the Graduate School of Arts and Sciences, Duke University.

A limited number of University Scholarships and Fellowships, among which are four Gurney Harriss Kearns Fellowships, ranging from \$1,400 to \$1,800 may be obtained by exceptionally qualified students. Applications for these must be submitted to the Dean of the Graduate School on University forms not later than March 1 of each year.

Inquiries concerning specific requirements of the Department of Religion in the Graduate School should be addressed to Professor H. Shelton Smith, Director of Graduate Studies in Religion.

DEMPSTER GRADUATE FELLOWSHIPS

The Methodist Board of Education offers each year a number of Dempster Graduate Fellowships for graduates of Methodist Theological Schools, who are engaged in programs of study leading to the degree of Doctor of Philosophy in Religion with a view to teaching in Methodist colleges and seminaries. Several Divinity School graduates have held these fellowships.

FACILITIES FOR ADVANCED STUDY IN THE AMERICAN SCHOOLS OF ORIENTAL RESEARCH

The Divinity School of Duke University is one of the supporting members of the American Schools of Oriental Research. Accordingly, students in the Divinity School have the privilege of attending the American School in Jerusalem or the one in Bagdad without charge for tuition. They may also compete for the financial aids which are offered annually by the Schools. These consist of four fellowships, the stipends depending upon available funds.

DIVINITY SCHOOL SEMINARS

The Divinity School, under provision of the James A. Gray fund, conducts each year two extension seminars providing two-day study courses for ministers. In 1956-57 seminars were conducted at the Central Methodist Church, Shelby, N. C. and the Hay Street Methodist Church Fayetteville, N. C. Lecturers were Dr. Gerald Knoff, Dr. W. Arthur Kale, and Dr. McMurry S. Richey.

SCHOOL FOR APPROVED PASTORS

In cooperation with the Department of In-Service Training of the Board of Education and the Southeastern Jurisdictional Conference of the Methodist Church, the Divinity School conducts a School for Approved Pastors of the Methodist Church. The school for 1957 is scheduled for July 17-August 9.

STUDENT GOVERNMENT ASSOCIATION

Each student of the Divinity School upon enrollment becomes a member of the Student Government Association. Four officers are elected by the student body annually in April to serve for the following year. These officers, the President, Vice-President, Secretary, and Treasurer, along with the Dean of the Divinity School, serve as the Executive Committee, and the committee chairmen constitute the Student Council, which meets in monthly session to review and coordinate the programs of the several committees. It is desired that all students contribute to the corporate life of the School through active participation in the work of the committees. The Association operates on the basis of a unified budget, each student contributing to its support dues in the amount of \$5.00 per year, payable at the time of fall registration; \$2.50 at spring registration for students who enter at that time.

STUDENT PUBLICATIONS

The Divinity School student body sponsors and publishes a pictorial yearbook, *The Circuit Rider*.

Admission and Requirements for Degrees



Requirements for Admission

THE Divinity School is a fully accredited member of the American Association of Theological Schools, and is one of the ten accredited seminaries of the Methodist Church. Candidates for admission must hold the degree of A.B., or its equivalent, based upon four years of work beyond secondary education, in a college which is approved by one of the regional accrediting bodies, and their college records must be such as to indicate their ability to carry on graduate professional studies. They will be admitted without examination on presentation of an official, satisfactory transcript of college and all other academic credits which they may have secured. Recommendations from three responsible persons are required. Women will be admitted on the same basis as men.

Applications may be rejected where transcripts show a considerable number of low grades even though the applicant may have eventually received a degree based upon a bare "C" average, especially where the applicant has required longer than the normal eight semesters of college work. Papers filed with applications are not returned.

It is desirable that each applicant for admission show a "B" average in his college work. An average of less than "C+" is not normally considered sufficient for admission.

The applications of students from foreign countries will be considered, each on its own merits, the general principle being that a training equivalent to that of a baccalaureate degree from an accredited American college must have been secured.

Because of the necessity of limiting admission of full three-year applicants, the Divinity School does not accept transfer students from other theological schools.

In addition to an adequate academic preparation, applicants must satisfy the Faculty as to their Christian character and purpose. A formal application blank may be secured from the office of the Divinity School. This must be filled out and returned by all candidates for admission. Application for admission should be made as soon as possible after the beginning of the applicant's last semester of college work. Applications received after April 1 cannot be assured of admis-

sion, financial aid or dormitory rooms for the ensuing academic year. A minimum of thirty days is required to process any application.

All persons admitted to the Divinity School are required to report to the Student Health Service, Duke Hospital, for physical examination on days and at hours specified at the time of matriculation. No admission is final until approved by the Student Health Service, which may require submission of a health certificate prior to arrival of prospective students. Applicants are also required to take certain tests administered by the Bureau of Testing and Guidance.

Persons who do not matriculate at the time for which they were originally admitted forfeit admission and must be formally re-admitted. A student who withdraws from the Divinity School and desires to return at a later date must file with the Dean a written request for a leave of absence.

The number of applications for admission to the School is considerably larger than the number of vacancies. In view of this fact, applicants are required on notification of admission to signify their acceptance within two weeks, and to pay an admission fee of \$15.00. (Make check payable to Treasurer of Duke University and send to the Office of the Dean of the Divinity School.) This fee is applied to the regular first-term bill if the student matriculates; if he fails to do so, the fee is forfeited. This does not apply to the Summer Session.

Under the terms of the Selective Service Act, as it now stands, pre-enrollment for later formal admission may be granted to persons who meet the Divinity School standards and requirements for admission. Applications for pre-enrollment may be addressed to the Office of the Dean. Pre-enrolled students must send transcripts of each year's college work by June 15th of each year in which they are pre-enrolled. *Pre-enrollment does not guarantee final admission*, and a person who has been pre-enrolled for any length of time must send a transcript of work by March 1 of the year in which admission is sought for the ensuing academic year. This must be accompanied by a letter from the college dean or other approved reference certifying to continued academic acceptability, good character and conduct. The admission fee of \$15.00 is due within two weeks of receipt of notice of final admission.

Not over 30 semester hours of Summer Session work may be credited toward the degree of Bachelor of Divinity.

In view of the fact that enrollment must be limited, persons who have already received the B.D. degree from Duke or elsewhere will not be admitted to the Divinity School except as special students in the Summer Session.

Unless all the work offered for the B.D. degree is completed within a period of nine years from the date of beginning, the student will be required to make formal application for re-admission and re-evaluation

of his credits in the light of the then-existing curriculum of the Divinity School. Except in unusual cases, work of a fragmentary character taken over a long period of years, or work taken many years before a student is admitted to the Divinity School, will not be accepted for credit toward the B.D. degree.

ADMISSION ON PROBATION

1. Applicants for admission who are graduates of non-accredited colleges will be considered on their merits, but only a few who give evidence of special promise will be admitted. Specifically, such applicants must show that they have attained a superior average (not less than "B") for a four-year college course.

Admission of such persons will, in every case, be *on probation*.

2. Applicants for admission who are graduates of accredited colleges but whose college transcripts do not fully meet Divinity School standards may also be admitted *on probation* if their recommendations justify consideration.

Probation means:

a. Students who, during the first year of Divinity School work (thirty semester hours), maintain a consistently low average, including one or more failures, will be required to withdraw from the school.

b. Students admitted on probation may carry only limited schedules of work, the amount to be determined by the Dean.

c. In the case of a student admitted on probation, no credit will be granted for any course in which, during the first year's work (thirty semester hours), a grade of less than "C" is recorded, unless the student's entire average in the year during which a "D" grade is received is "C" or better.

d. When the student has been admitted on probation, and is subsequently found to be deficient in the essential requisites of any given area of the "Pre-Seminary Curriculum" (see next section of catalogue), the Divinity School Faculty reserves the right to direct that the student make up such deficiencies by additional courses of study taken in other schools of Duke University in order to qualify for either the B.D. or M.R.E. degree, but without credit for such courses toward those degrees.

Students whose work after admission is not satisfactory may be placed on probation for one or more semesters and may be denied credit for courses in which "D" grades are recorded.

PRE-SEMINARY CURRICULUM

The Divinity School, in substantial agreement with the standards of the American Association of Theological Schools, recommends that prospective candidates for admission keep in mind the desirability of including the following in their undergraduate curriculum:

It is suggested that a student should acquire a total of 90 semester hours or complete approximately three-fourths of his college work in the areas listed below. No work done towards a first college degree may be used toward a Divinity School degree.

<i>Basal Fields</i>	<i>Semesters</i> (At least the number indicated)
English	6
Literature, composition and speech, and related studies	
History, ancient, modern European, and American	3
Philosophy, orientation in history, content and method	3
Religion	3
Psychology	1
A foreign language	4
Greek, Latin, Hebrew, French and German are especially recommended.	
Natural sciences, preferably physics, chemistry and biology	2
Social sciences	6
At least two of the following:	
Sociology, economics, political science, social psychology and education.	

Of the various possible areas of concentration, where areas of concentration are required, a major in English, philosophy, or history is regarded to be the most desirable.

Requirements for the Degree of Bachelor of Divinity

The requirements for graduation stated in this catalogue apply to all students who entered the Divinity School after June 1, 1954.

The requirements for the degree of Bachelor of Divinity fall into six categories as follows:

I. Required Courses, to be taken by all candidates for the degree.

11. Introduction to the Old Testament I	3 s.h.
12. Introduction to the Old Testament II	3 s.h.
13. History of the Church through the Protestant Reformation	4 s.h.
17. Effective Speaking	2 s.h.
18. Early Christian Life and Literature	3 s.h.
19. Introduction to New Testament Theology	3 s.h.
20. Introduction to Christian Theology	4 s.h.
29-30. Sermon Construction—Theory and Practice	4 s.h.

II. Limited-Elective Courses.

These may be used also as free electives after the limited-elective requirements have been met, and for Vocational Group requirements.

1. Two of the following three courses required:

22. The Philosophy of Christian Education	3 s.h.
27. Christian Ethics I	3 s.h.
31. Introduction to Philosophy of Religion (or 121)	3 s.h.

2. Two of the following three courses required:
 14. History of the Modern Church 2 s.h.
 21. Introduction to the History of Christian Doctrine 2 s.h.
 28. Movements in American Protestant Thought 3 s.h.
3. Three of the following four courses required (Students will note special requirements of each Vocational Group):
 23. Church Administration I 2 s.h.
 24. Philosophy of the Christian World Mission 2 s.h.
 25. Educational Theory and Practice in the Church 2 s.h.
 26. Introduction to Pastoral Care 2 s.h.

III. Vocational Groups.

Each student, not later than the end of the middle year, will choose one of the five Vocational Groups listed on Page 20 and will meet the vocational requirements of the group chosen.

IV. Senior Seminars.

Each student will elect one of the Senior Seminars listed on Page 35.

V. Free Electives.

The student will choose a sufficient number of courses to make up the total of 90 semester hours required for graduation. Language courses count as free electives.

VI. English Bible. Demonstration of a detailed knowledge of the contents of the narrative portions of the English Bible. Examinations for this purpose in Old and New Testament are given each spring. (See Calendar for exact dates.)

Students who show deficiencies in English will be required to take special training in addition to meeting the other requirements for the degree. A degree may be withheld on the grounds of English deficiency only.

FACULTY ADVISORS

Each entering student is assigned to a Faculty Advisor at the time of registration and must report to his Advisor within the first three weeks of the semester.

*Suggested Distribution by Years of Required and
* Limited-Elective Courses*

FIRST (JUNIOR) YEAR

<i>First Semester</i>	<i>Semester Hours</i>	<i>Second Semester</i>	<i>Semester Hours</i>
<i>Required in this Semester</i>		<i>Required in this Semester</i>	
11. Introduction to the Old Testament I	3	18. Early Christian Life and Literature	3
13. History of the Church through the Protestant Reformation	4	20. Introduction to Christian Theology	4
17. Effective Speaking	2	Field Work Seminar (For those doing field work)	1
<i>*Limited-Electives Available in this Semester</i>		<i>*Limited-Electives Available in this Semester</i>	
23. Church Administration I	2	22. The Philosophy of Christian Education	3
31. Introduction to Philosophy of Religion	3	24. Philosophy of the Christian World Mission	2
15 hours is the normal program; not over 16 hours may be scheduled.		English Bible Examinations	0
		15 hours is the normal program; not over 16 hours may be scheduled.	

SECOND (MIDDLE) YEAR

<i>First Semester</i>	<i>Semester Hours</i>	<i>Second Semester</i>	<i>Semester Hours</i>
<i>Required in this Semester</i>		<i>Required in this Semester</i>	
19. Introduction to New Testament Theology	3	12. Introduction to the Old Testament II	3
29. Sermon Construction—Theory	2	30. Sermon Construction—Practice	2
<i>*Limited-Electives Available in this Semester</i>		<i>*Limited-Electives Available in this Semester</i>	
21. Introduction to the History of Christian Doctrine	2	14. History of the Modern Church	2
25. Educational Theory and Practice in the Church	2	26. Introduction to Pastoral Care	2
28. Movements in American Protestant Thought	3	27. Christian Ethics I	3
15 hours is the normal program; not over 16 hours may be scheduled.		15 hours is the normal program; not over 16 hours may be scheduled.	

*See page 15 for statement on Limited-Electives.

Schedule of Required and Limited-Elective Courses

FIRST YEAR—FIRST SEMESTER

<i>Hour</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>
8:30						
9:30		C. H. 13	C. H. 13	C. H. 13	C. H. 13	
10:30		Chapel	Chapel	Chapel	Chapel	
11:00		†Phil. R. 31	Assembly	†Phil. R. 31	†Phil. R. 31	
12:00		Speech 17†		Speech 17†		
2:00	O. T. 11	†C. A. 23	O. T. 11	†C. A. 23	O. T. 11	

FIRST YEAR—SECOND SEMESTER

<i>Hour</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>
8:30						
9:30		Theol. 20	Theol. 20	Theol. 20	Theol. 20	
10:30		Chapel	Chapel	Chapel	Chapel	
11:00		†Phil. C. Ed. 22	Assembly	†Phil. C. Ed. 22	†Phil. C. Ed. 22	
12:00		C. A. 142*	†H. R. 24	C. A. 144*	†H. R. 24	
2:00	N. T. 18		N. T. 18		N. T. 18	

*Students doing any kind of field work will choose one of these seminars.

†Limited-Elective.

‡Additional sections of Speech are available.

SECOND YEAR—FIRST SEMESTER

<i>Hour</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>
8:30						
9:30		†C. Ed. 25	†H. T. 21	†C. Ed. 25	†H. T. 21	
10:30		Chapel	Chapel	Chapel	Chapel	
11:00		†Am. Rel. Th. 28	Assembly	†Am. Rel. Th. 28	†Am. Rel. Th. 28	
12:00		Preaching 29		Preaching 29		
2:00	N. T. 19		N. T. 19		N. T. 19	

SECOND YEAR—SECOND SEMESTER

<i>Hour</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>
8:30						
9:30			†Pastoral Care 26		†Pastoral Care 26	
10:30		Chapel	Chapel	Chapel	Chapel	
11:00		†C. E. 27	Assembly	†C. E. 27	†C. E. 27	
12:00		Preaching 30		Preaching 30		
2:00	O. T. 12	†C. H. 14	O. T. 12	†C. H. 14	O. T. 12	

†Limited-Elective.

THIRD (SENIOR) YEAR

Vocational Groups. One of these will be chosen by every B.D. candidate not later than the end of the Middle Year.

The student will also elect one Senior Seminar: he may not take more than one without special permission of the Dean. The Seminar will carry credit of two semester hours.

Electives in sufficient amount to complete 90 hours for graduation will be taken.

Speech 132 is required of all students found deficient in Speech and Preaching.

I. THE PREACHING MINISTRY AND PASTORAL SERVICE.

The student will plan his program so as to include:

Christian Education 25 and either 158 or 160 through 166.

Church Administration 23 and one additional course in that field.

Pastoral Care 26 and one additional course in that field.

Missions 24 and one course in Christian Ethics.

History of Religion, one course. (H.R. 159 or 179.)

II. CHRISTIAN EDUCATION.

The student should plan his course so as to include: Six courses distributed between the fields of Church Administration and Christian Education, one of which must be Christian Education 22, 125, or 129; one, Church Administration 23 and one, Christian Education 25.

III. MISSIONS.

The student should plan his program so as to include: Missions 24 and 133, one course in the History of Religion, one course in Christian Ethics; plus such courses as may be recommended by the instructor in Missions on the basis of each student's needs, interests, and previous choices.

IV. CHAPLAINCY: HOSPITAL, MILITARY, AND OTHER.

The student should plan his program so as to include: Pastoral Care 26, 170, 177, and 171 or 172; Christian Education 22, or 125, or 129; and Philosophy of Religion, 102 or 110.

V. TEACHING AND RESEARCH IN RELIGION.

During the senior year, those choosing Vocational Group V must take one course from each of five fields drawn from the following ten:

American Religious Thought

Bible (may be language)

Christian Ethics

Church History

Historical Theology

Missions and Social Ethics

Christian Education

Christian Theology

Biblical Theology (O.T. 101, 301,
310, N.T. 116, 311, 312, 319)

History and Philosophy of

Religion

ADMINISTERING THE CURRICULUM

For the administration of the curriculum the following regulations have been adopted:

Full-time students must take the required courses as specified for the respective semesters, and are advised to choose the limited-electives as suggested for each semester.

Since the four and one-half day schedule and the free week-ends have been planned with special reference to the needs of students holding pastoral charges, such students are permitted, but not required, to carry the total of the hours of the required work and limited-electives as suggested for each of the first four semesters, but the total hours may not exceed thirteen without special permission of the Dean. The amount of work in the remaining semesters will be governed by the same principle. A student who does not do creditable work will be required to reduce his schedule. The schedules of all students are subject to the approval of the Dean, but any reduction below eleven hours must be approved by him.

The status of "special student" may not be granted simply to permit avoidance of the schedule of required courses. Every request for this classification will be carefully investigated and approval voted in each case by the Curriculum Committee in the cases of students already admitted to the Divinity School, and by the Admissions Committee in the case of applicants for admission as "special students."

A fee of \$10.00 is charged for auditing any course except where a student is already paying regular University fees. Permission to audit requires the approval of the Dean and the instructor concerned.

Students working under or assisted by the Duke Endowment, or by Divinity School funds, are required to take one of the Field Work seminars. This work will be taken in the second semester of the first year.

For a student taking both Greek and Hebrew, the Greek may be continued in the second year by postponing one or both of the required courses in Old and New Testament. In such cases, the Hebrew will be the free elective in that year.

A part-time student who desires to begin the study of Greek in the first year may postpone the required course in Old or New Testament.

Suitable entry will be made on the permanent record of any student who is granted permission to deviate from the requirements in the matter of language.

It is the responsibility of each student to see that he meets all requirements for graduation, and to take his courses in proper sequence. He is also responsible for seeing that any special permission granted him to deviate from the normal program is properly recorded in his personal file. Members of the Faculty have no authority to grant deviations unless these are stated in a letter from the instructor in question to the Dean and approved by him; these to be added to the student's permanent record.

Students who are reported by the treasurer's office as delinquent in their accounts will be debarred from credit in courses until cleared by the treasurer's office. Transcripts will not be issued for delinquent students.

GRADING SYSTEM

The grading system of the Divinity School employs the letters A, B, C, D, and F, which have been defined as follows: A = Excellent; B = Superior; C = Average; D = Inferior; F = Failure; WP = Withdrew Passing; WF = Withdrew Failing; and Inc. = Incomplete; P, Passed (satisfactory work in Field Work or M.R.E. Project). (See below.) No percentage equivalents are stated. A student is expected to maintain an average of C.

The Faculty has voted that in the average course of considerable size, especially required and limited-elective courses, the total of A and B grades should normally not run above 33⅓%. In all courses where the instructor considers attendance a necessary part of the work of the course, a student may not receive a grade of over C if his absences total 12% of the regular class periods, and if the absences total 24% of the class periods he may not receive credit for the course.

Grades of Incomplete received at the end of the fall semester must be removed by the completion of the work of the course not later than March 15. Grades of Incomplete received at the end of the spring semester must be removed by October 1. If the work of the course is not completed by these dates, the grades shall be recorded as "F."

No student shall be permitted to drop a course after the expiration of one-third of the period of instruction of the course without incurring failure, except for causes adjudged by the Dean to be beyond the student's control.

Requirements for the Degree of Master of Religious Education

The course of study leading to this degree is designed for individuals desiring to engage in various forms of Christian Education.

Candidates for this degree must hold the degree of A.B. (or its equivalent), based upon four years of work beyond secondary education, in a college which is approved by one of the regional accrediting bodies, and with academic and personal records which afford promise of competence in this area of service. The course of study will be especially useful for individuals who have had one or more years of experience in Christian Education and desire further training. Candidates for this degree will be limited in number, and individuals interested are urged to apply for admission well in advance of the opening of the academic year. All work offered for this degree, whether in the regular year or in summer sessions, must be completed within a period of six years from the date of beginning.

An applicant must show a college average of not less than C+.

PREREQUISITES

Three of the following five prerequisite studies must have been taken by the candidate prior to his admission to the Divinity School or must be secured, without credit toward the M.R.E. degree, after being admitted:

General Psychology	3 s.h.
Sociology	3 s.h.
Education	3 s.h.
Philosophy	3 s.h.
Religion	3 s.h.

GENERAL REQUIREMENTS

Sixty semester hours of graduate-professional work are required for graduation. Not more than twelve semester hours of this work may be taken in approved summer sessions. Because of the necessity of limiting admission of full-time two-year applicants, the Divinity School does not accept transfer students from other institutions.

No credits are allowed for undergraduate courses. However, in approving plans of study leading to this degree, consideration will be given to earlier work taken in the fields of Biblical studies and Christian Education provided such courses were taken in the Junior and Senior years in accredited four-year colleges. Also where candidates for the degree have been engaged professionally as Directors of Christian Education for not less than twelve months prior to entering the Divinity School the amount of Field Work may, upon recommendation of the Director of the M.R.E. program and the approval of the Dean, be reduced to not less than six hours of Project or Directed Field Work during the period required for completing requirements for the degree.

A student who secures credit for 15 semester hours each semester will be in line for graduation at the end of two academic years. The amount of work allowed in each semester may not exceed that permitted in the B.D. curriculum.

COURSE REQUIREMENTS

(Not to include any courses numbered above 199, except in Biblical Studies.)

Not less than six semester hours of Divinity School work in Biblical Studies (including both Old and New Testaments) for all M.R.E. candidates, and up to twelve semester hours of such work for candidates adjudged to be insufficiently prepared in Biblical Studies.

Not less than nine nor more than fifteen semester hours in the field of Christian Education, to be distributed as follows: not less than

six nor more than twelve semester hours in courses in the practical aspects of Christian Education, and not less than three in the psychological and philosophical aspects of Christian Education.

Not less than four nor more than seven semester hours, taken in two fields, chosen from the offerings in Christian Theology, Christian Ethics, and American Religious Thought.

Not less than four nor more than seven semester hours, taken in two fields, chosen from the offerings in Church History, Historical Theology, and Philosophy of Religion.

Not less than four nor more than five semester hours, taken in two fields, chosen from the offerings in Missions, Church Administration, and Pastoral Care.

Not less than two nor more than three semester hours, taken in one field, chosen from the offerings in Speech, Public Worship, and Church Music.

Project or Directed Field Work: Not less than six nor more than twelve semester hours.

Free electives in sufficient amount to complete sixty hours for graduation will be taken, if necessary.

Senior Seminars: The Senior Seminars of the B.D. curriculum are open to M.R.E. candidates only in the second year, by special permission of the Dean.

Conduct and Ministerial Acceptability

All students are admitted subject to the rules of the University and of the Divinity School, and continuance in the School is conditioned upon the observance of such rules.

The University expects of its students loyal and hearty cooperation in maintaining high standards of conduct as well as of scholarship. The University, therefore, reserves the right, and matriculation by the student is a concession of this right, to compel the withdrawal of any student whose conduct at any time is not satisfactory to the University, even though no specific charge is made against the student.

Divinity School students whose progress and development show that they are not suited to the work of the ministry will not be permitted to continue in the School.

Courses of Instruction*



REQUIRED courses, Limited-Electives, and Senior Seminars are numbered from 11 to 99. Elective courses carrying credit in the Divinity School only are numbered from 101 to 199. Courses approved for credit in both the Divinity School and the Graduate School of Arts and Sciences are numbered above 200. Lists of courses to be offered in any semester will be available at the time of each registration.

I. Biblical Studies

OLD TESTAMENT

11. INTRODUCTION TO THE OLD TESTAMENT I.—The origin, literary forms, and contents of the books of the Old Testament in their geographical and historical setting to the Exile. 3 s.h. MR. STINESPRING

12. INTRODUCTION TO THE OLD TESTAMENT II.—The Post-Exilic period with special reference to Psalms, wisdom literature, and the problem of theodicy. 3 s.h. MR. BROWNLEE

101. POST-EXILIC PROPHECY.—A study of the Post-Exilic prophets from Ezekiel to Daniel, with special reference to Messianic prophecy. 2 s.h. MR. BROWNLEE

196. THE BIBLE AND RECENT DISCOVERIES.—A survey of the contribution of the cultural setting of the Bible as an aid to its understanding. Illustrated with archaeological slides. 3 s.h. MR. BROWNLEE

197. CULTURAL HISTORY OF PALESTINE.—A study of significant contributions to civilization made in ancient, medieval, and modern Palestine with special reference to the three religions, Judaism, Christianity, and Islam. 3 s.h. MR. STINESPRING

201-202. FIRST HEBREW.—The principles and structure of the Hebrew language with translation of selected Old Testament narratives. 6 s.h. MR. STINESPRING

207. SECOND HEBREW.—II Samuel the first semester. 3 s.h. MR. STINESPRING OR MR. BROWNLEE

208. SECOND HEBREW.—The Qumran Isaiah Scroll the second semester. 3 s.h. MR. BROWNLEE

301. THE RELIGIOUS THOUGHT OF POST-EXILIC JUDAISM.—A study of the development of religious ideas in Post-Exilic Judaism. Prerequisite: O.T. 11. 3 s.h. MR. BROWNLEE

304. ARAMAIC.—A study of the Aramaic portions of the Old Testament, and selected passages from the Targums, Midrashes, and Talmuds. 3 s.h. MR. STINESPRING OR MR. BROWNLEE

* On approval of the Dean, courses offered in the Graduate School of Arts and Sciences other than those approved for credit in the Divinity School may be approved for credit in individual cases, provided no equivalent course is offered in the Divinity School; each case to be decided on its merits.

305. THIRD HEBREW.—A study of late Hebrew prose, with readings from Chronicles, Ecclesiastes, and the Mishnah. 3 s.h. Mr. STINESPRING

306. ADVANCED HEBREW.—A course on the Dead Sea Scrolls. 3 s.h. Mr. BROWNLEE

307. SYRIAC.—A study of the script and grammar, with readings from the Syriac New Testament and other early Christian documents. Some knowledge of Hebrew and Aramaic prerequisite. 3 s.h. Mr. STINESPRING

309. HISTORY OF THE ANCIENT NEAR EAST.—A specialized study of the civilizations of Egypt, Palestine, Syria, and Mesopotamia in the light of Biblical archaeology. 3 s.h. Mr. STINESPRING

310. OLD TESTAMENT PROPHECY.—The prophetic movement in Israel with special emphasis on the prophets of the eighth century B.C. Prerequisite: O.T. 11 and O. T. 12. 3 s.h. Mr. STINESPRING

SEE ALSO Pr. 183.

*HISTORY OF ART 215. RELIGIOUS ART OF THE ANCIENT NEAR EAST.—The development of art, particularly architecture and sculpture, as the material expression of religious ideas in Egypt, Mesopotamia, and in part Syria and Palestine to the Persian conquest. 3 s.h. Mr. MARKMAN

*HISTORY OF ART 216. RELIGIOUS ART OF THE CLASSICAL WORLD.—The religious art, particularly architecture and sculpture, of Greece and Rome with special emphasis on the monuments in the Near East. 3 s.h. Mr. MARKMAN

NEW TESTAMENT

18. EARLY CHRISTIAN LIFE AND LITERATURE.—A basic study of the civilization in which Christianity began; the origin and development of the Christian Church and its literature through the second century. 3 s.h. Mr. CLARK

19. INTRODUCTION TO NEW TESTAMENT THEOLOGY.—A constructive analysis and exposition of the positive doctrinal content of the New Testament. Prerequisite: N. T. 18. 3 s.h. Mr. ANDERSON

103-104. HELLENISTIC GREEK.—Designed for beginners to enable them to read the Greek New Testament. 6 s.h. Mr. BROWN

105. LIFE OF PAUL.—A study of Paul's life on the basis of Acts and the letters of Paul, emphasizing the permanent values in Paul's work and his contribution to the world. 3 s.h. Mr. MYERS

109. HISTORY OF THE ENGLISH BIBLE.—A general study of the history of the English version with comparison and evaluation of the numerous contemporary translations. This development will be illustrated from the Divinity School Bible collection, with access to and examination of the original editions. 3 s.h. Mr. CLARK

116. LIVING ISSUES OF NEW TESTAMENT THEOLOGY.—2 s.h. Mr. ANDERSON

217. THE NEW TESTAMENT IN GREEK.—Extensive reading of the Greek text of the New Testament, with special emphasis upon its interpretation. Prerequisite: six semester hours' study of the Greek language. 3 s.h. Mr. CLARK

218. GALATIANS AND I CORINTHIANS.—A detailed study of two of Paul's major epistles, based on the Greek text. Prerequisite: six semester hours' study of the Greek language. Alternate priority. 3 s.h. Mr. ANDERSON

220. I PETER AND THE GOSPEL OF JOHN.—A detailed study of two of the non-Pauline writings of the New Testament. The course will be based on the Greek text. Prerequisite: six semester hours' study of the Greek language. Alternate priority. 3 s.h. Mr. ANDERSON

* Course offered in the Graduate School of Arts and Sciences which is credited toward the degree of Bachelor of Divinity.

311. THE LIFE AND TEACHINGS OF JESUS.—A study of the events and sayings of the historical Jesus, in the light of His mission. 3 s.h. MR. CLARK

312. ADVANCED NEW TESTAMENT THEOLOGY.—An examination of the central aspects of New Testament Theology. Prerequisite: N.T. 19. 3 s.h. MR. ANDERSON

313. APOSTOLIC FATHERS.—A study of the Christian development from Clement of Rome to Polycarp (90-155 A.D.), with readings in the Greek text. 3 s.h. MR. CLARK

314. PATRISTIC THOUGHT.—A study of the development of early Christian doctrine to the period of Irenaeus. Prerequisite: N.T. 19. 3 s.h. MR. ANDERSON

316. HELLENISTIC RELIGIONS.—A study of the Gentile religions in the Roman Empire, at the beginning of the Christian era. Prerequisite: N.T. 18. 3 s.h. MR. CLARK

317. THE SYNOPTIC GOSPELS.—A detailed study of their characteristics and contents, based upon the Greek text, with attention to their respective sources and to the development of synoptic criticism. Prerequisite: Six semester hours' study of the Greek language. 3 s.h. MR. CLARK

318. TEXTUAL CRITICISM OF THE NEW TESTAMENT.—A study of the scientific recovery of the Greek text on which modern versions are based; manuscript discoveries; principles of textual criticism; practice in collating original manuscripts in the Duke collection. Prerequisite: N.T. 103-104, or its equivalent. 3 s.h. MR. CLARK

319. JUDAISM AND EARLY CHRISTIANITY.—3 s.h. MR. ANDERSON

SEE ALSO Pr. 184 and 186.

*GREEK 257.—The social and cultural history of the Hellenistic world from Alexander to Augustus. 3 s.h. MR. ROGERS

*LATIN 258.—The social and cultural history of the Graeco-Roman world. 3 s.h. MR. ROGERS

II. Historical Studies

HISTORY OF RELIGION AND MISSIONS

24. PHILOSOPHY OF THE CHRISTIAN WORLD MISSION.—A study of theological foundations, guiding principles, and contemporary problems of the World Christian Community. 2 s.h. MR. LACY

126. MISSIONARY EDUCATION IN THE CHURCH.—Practical programs for Church School, audio-visual aids, preaching, stewardship, and special projects. 2 s.h. MR. LACY

133. HISTORY OF CHRISTIAN MISSIONS.—A survey of the spread of Christianity with special emphasis on 19th and 20th century Protestantism. 2 s.h. MR. LACY

135. AREA STUDIES OF THE CHRISTIAN CHURCH.—The cultural setting and current programs and policies of the Church in one of the following areas: a. Latin America, b. India and Pakistan, c. Africa, d. Southeast Asia, e. Japan-Korea-Philippines, f. Moslem Lands, or g. United States Home Missions. (The area of study to be determined by student interest in consultation with the instructor.) 2 s.h. MR. LACY

156. FOUNDATIONS OF THE ECUMENICAL MOVEMENT.—The historical, theological and organizational background of Church unity and disunity, with an analysis of contemporary structures and development. 3 s.h. MR. LACY

* Course offered in the Graduate School of Arts and Sciences which is credited toward the degree of Bachelor of Divinity.

159. RELIGIONS OF INDIA.—Historical and theological introduction to Indian religious life and thought. The development of Buddhism is covered, as well as Jainism and Sikhism, along with the various modes of Hinduism. 3 s.h. MR. FOSTER

179. RELIGIONS OF THE FAR EAST AND THE NEAR EAST. Historical and theological introduction to the major indigenous traditions of China and Japan, as well as to Zoroastrianism, Islam, and Judaism. 3 s.h. MR. FOSTER

CHURCH HISTORY

13. HISTORY OF THE CHURCH THROUGH THE PROTESTANT REFORMATION.—A survey through the sixteenth century in terms of spiritual genius, organizational development, great literature, and representative movements. 4 s.h. MR. PETRY

14. HISTORY OF THE MODERN CHURCH.—A survey of the main currents in post-reformation and modern church history. 2 s.h. MR. SCHAFER

136. PRE-REFORMATION PREACHING.—Sermons, handbooks, and other historical sources studied in relation to Biblical preaching and the liturgical church, the problem of popular ministry and the issues of Christian reform. Prerequisite: C.H. 13. 2 s.h. MR. PETRY

137. RELIGIOUS LEADERS IN CHRISTIAN HISTORY.—Representative leaders in the early and medieval church studied in relation to contemporary churchmanship. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

138. GREAT BOOKS IN CHRISTIAN HISTORY.—An intensive study of Augustine's *Confessions*, Thomas à Kempis' *Imitation of Christ*, Erasmus's *Complaint of Peace*, Luther's *Christian Liberty*, Calvin's *Instruction in Faith*, and Andrewes' *Private Devotions*. 3 s.h. MR. PETRY

139. METHODISM.—A study of Methodist societies in England and the developing church in America as they gave rise to such historic issues as polity, education, division, and reunion. Prerequisite: C.H. 13. 2 s.h. MR. PETRY

330. THE CHURCH IN EUROPE SINCE 1800.—Emphasis is placed on the relation of the church to the social, economic, and political life of Modern Europe. Particular attention is given to Papal pronouncements on social issues, the relationship of Eastern to Western institutions, and ecclesiastical historiography as it involves source editions, periodicals, and ecumenical literature. 3 s.h. MR. PETRY

331. THE SOCIAL MESSAGE OF THE EARLY AND MEDIEVAL CHURCH.—A study of the social teachings and contributions of the Christian church prior to the Protestant Reformation. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

332. THE MEDIEVAL CHURCH.—Outstanding characteristics of the medieval church, emphasizing theory, polity, institutions, sacraments, and worship. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

334. CHURCH REFORMERS AND CHRISTIAN UNITY.—The work of such reformers as Marsilius of Padua, William of Ockham, Jean Gerson, Pierre d'Ailly and Nicholas of Cusa in relation to ecclesiastical schism and the search for Christian unity through representative councils. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

336. CHRISTIAN MYSTICISM IN THE MIDDLE AGES.—Source studies, in historical perspective, of such late medieval mystics as Bernard of Clairvaux, the Victorines, Ramon Lull, Meister Eckhart, Richard Rolle, Catherine of Siena, and Nicholas of Cusa. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

HISTORICAL THEOLOGY

21. INTRODUCTION TO THE HISTORY OF CHRISTIAN DOCTRINE.—Formative periods of doctrine and controversy illustrating the nature and content of historical theology. 2 s.h. MR. SCHAFER

120. THE CREEDS OF CHRISTENDOM.—A historical and interpretative study of great Christian creeds and confessions. Prerequisite: C.T. 20. 3 s.h.

MR. SCHAFER

129. SEMINAR IN HISTORICAL THEOLOGY.—Selected problems in the history of Christian theology. Prerequisite: H.T. 21. 3 s.h.

MR. SCHAFER

198. THE HERITAGE OF THE REFORMATION.—The doctrine and practice of the Reformers studied for their contribution to the life and thought of the modern church. 3 s.h.

MR. SCHAFER

323. HISTORY OF CHRISTIAN THOUGHT I.—A historical study of theology in the ancient and medieval church. Prerequisite: permission of instructor. 3 s.h.

MR. SCHAFER

324. HISTORY OF CHRISTIAN THOUGHT II.—A historical study of theology from the Reformation. Prerequisite: permission of instructor. 3 s.h.

MR. SCHAFER

AMERICAN RELIGIOUS THOUGHT

28. MOVEMENTS IN AMERICAN PROTESTANT THOUGHT.—A historical survey of the main currents in Protestant thought in America. 3 s.h.

MR. SMITH

199. THE AMERICAN SOCIAL GOSPEL.—A study of Protestant social thought and action in America since 1865. 3 s.h.

MR. SMITH

395. CHRISTIAN THOUGHT IN COLONIAL AMERICA.—Exposition of the main currents in Protestant Theology. 3 s.h.

MR. SMITH

396. CHRISTIAN THOUGHT IN NINETEENTH CENTURY AMERICA.—Comparative study of Orthodoxy and Liberalism. 3 s.h.

MR. SMITH

397. CONTEMPORARY AMERICAN THEOLOGY.—Critical appraisal of conflicting tendencies in American theological thought. 3 s.h.

MR. SMITH

370. SEMINAR: JONATHAN EDWARDS.—A critical analysis of Edwards' major theological works. 2 s.h.

MR. SMITH OR MR. SCHAFER

371. SEMINAR: JOHN WESLEY.—A study of Wesley's basic Christian doctrines. 2 s.h.

MR. SMITH

372. SEMINAR: THEOLOGY OF PAUL TILlich.—An examination of Tillich's philosophical theology. 2 s.h.

MR. SMITH OR MR. FOSTER

III. Theological Studies

PHILOSOPHY OF RELIGION

31. INTRODUCTION TO PHILOSOPHY OF RELIGION.—Basic historical orientation in religious thought, especially in Western Culture. 3 s.h.

MR. FOSTER

102. CHRISTIAN FAITH AND THE PROBLEM OF EVIL.—Analysis of the questions raised for faith by tragedy, suffering and/or evil, examination of answers proposed in Christian and philosophical literature. 2 s.h.

MR. FOSTER

110. CHRISTIAN FAITH AND MODERN SCIENCE.—Relations, tensions, and possible harmonizations of scientific methodology and modern scientific knowledge with the Christian Faith. 2 s.h.

MR. FOSTER

121. GOD AND THE WORLD.—An examination of the Christian doctrines of God and the creation in the context of the History of Religions and the History of Philosophy, with emphasis upon the contemporary scene. 3 s.h.

MR. FOSTER

CHRISTIAN THEOLOGY

20. INTRODUCTION TO CHRISTIAN THEOLOGY.—Contemporary theological tendencies, method and theory of knowledge, and introductory interpretation of the principal tenets of the Christian faith. 4 s.h.

MR. CUSHMAN

107. THE PERSON AND WORK OF CHRIST.—The problem of knowledge of Christ and formulation of a doctrine of his work and person in the light of Biblical eschatology. Prerequisite C.T. 20. 3 s.h. Mr. CUSHMAN

108. THE CHRISTIAN DOCTRINE OF REVELATION AND AUTHORITY.—An intensive examination of the meaning, form and content of revelation, and its relation to the problem of authority. Prerequisite: C.T. 20. 3 s.h. Mr. FOSTER

224. CONCEPTIONS OF MAN IN WESTERN THOUGHT.—An analysis and interpretation of important types of philosophical and theological theory. 3 s.h. Mr. CUSHMAN

320. SEMINAR: FRIEDRICH SCHLEIERMACHER. Critical examination of the dogmatic system. Prerequisite: permission of instructor. 2 s.h. Mr. CUSHMAN

321. PLATONISM AND CHRISTIANITY.—An analysis of Plato's religious philosophy and a survey of its continuing influence in Hellenistic and Christian thought. Prerequisite: six semester hours in Theology. 3 s.h. Mr. CUSHMAN

322. NINETEENTH CENTURY EUROPEAN THEOLOGY.—Protestant theology from Kant to Herrmann together with representative British theologians. 3 s.h. Mr. CUSHMAN

323. PHILOSOPHICAL THEOLOGY I.—Main problems in the history of philosophical theology. Prerequisite: permission of instructor. 3 s.h. Mr. CUSHMAN

326. PHILOSOPHICAL THEOLOGY II.—Prolegomena to the system of Christian Theology. Prerequisite: C.T. 325. 3 s.h. Mr. CUSHMAN

328. SEMINAR IN TWENTIETH CENTURY EUROPEAN THEOLOGY.—Critical examination of the thought of selected representative theologians. Prerequisite: permission of instructor. 2 s.h. Mr. CUSHMAN

SEE ALSO NEW TESTAMENT 312.—ADVANCED NEW TESTAMENT THEOLOGY.

CHRISTIAN ETHICS

27. CHRISTIAN ETHICS I.—The central assumptions and principles of the Christian conception of the good life. 3 s.h. Mr. BEACH

114. CHRISTIAN ETHICS II.—A consideration of special problems involved in the application of Christian ethics in modern society. Prerequisite: C.E. 27. 2 s.h. Mr. BEACH

190. THE CHRISTIAN CRITIQUE OF COMMUNISM.—Analysis of and alternatives to the dynamic secular ideology from a religious standpoint. 3 s.h. Mr. LACY

192. CHRISTIANITY AND INTERNATIONAL RELATIONS.—An application of Christian Ethics to world problems. 3 s.h. Mr. LACY

194. INTRODUCTION TO CHRISTIAN SOCIAL ETHICS.—Christian norms for social policy and their application to the domestic, economic, political, and racial patterns of modern culture. 3 s.h. Mr. LACY

387. CHRISTIAN ETHICS AND SOCIAL PHILOSOPHY.—Selected social philosophies from Locke to Sumner, analyzed from the standpoint of Christian ethics. Prerequisite: C.E. 27. 3 s.h. Mr. LACY

389. CHRISTIAN ETHICS AND CONTEMPORARY CULTURE.—A study of the interaction between Christian thought and current secular social theory. Prerequisite: C.E. 27 or its equivalent. 3 s.h. Mr. BEACH

390. CURRENT PROBLEMS IN CHRISTIAN ETHICAL THEORY.—A critical study, seminar style, of dominant issues in Christian Ethics, through an analysis of a variety of contemporary Christian treatments of such problems as love, justice, community and vocation. Prerequisite: C.E. 27 or its equivalent. 3 s.h. Mr. BEACH

391. HISTORICAL TYPES OF CHRISTIAN ETHICS I.—A critical study of representative statements of Christian ethical theory, through the early Reformation. Prerequisite: C.E. 27 or its equivalent. 3 s.h. MR. BEACH

392. HISTORICAL TYPES OF CHRISTIAN ETHICS II.—A continuation of C.E. 391, from the Reformation through current Christian ethical theory. Prerequisite: C.E. 391. 3 s.h. MR. BEACH

393. THE CHRISTIAN INTERPRETATION OF HISTORY.—A comparative examination of the chief secular and Christian theories of history current in Western thought. For advanced students. Prerequisite: C.E. 27. 3 s.h. MR. BEACH

394. CHRISTIANITY AND THE STATE.—The relation of the Christian theory of the State to political problems with special consideration of the religious assumptions underlying democratic theory and practice, and of the relationship of church to state. Prerequisite: C.E. 27. 3 s.h. MR. BEACH

IV. Practical Studies

CHURCH ADMINISTRATION

23. CHURCH ADMINISTRATION I.—An introduction to the administrative and supervisory procedure essential in the total work of the church. 2 s.h. MR. WALTON

141. CHURCH ARCHITECTURE AND BUILDING.—A study of church architecture in relation to the total program of the church of today. 2 s.h. MR. WALTON

142. FIELD WORK I—GENERAL.—A course designed to help with personal and parish problems, and the techniques of successful service. 1 s.h. (Note: All students working under or assisted by the Duke Endowment or by Divinity School funds are required to take this course, or 144, Field Work II, or 145, Field Work III.) MR. WALTON

144. FIELD WORK II—RURAL.—This course is designed to prepare students for work in rural churches. It emphasizes the training values in field work. 1 s.h. MR. WALTON

145. FIELD WORK III—URBAN.—This course is designed to prepare students for work in urban churches. It is planned to help the student fit into the urban situation and to gain the most from his field work. 1 s.h. MR. QUEEN

146. CHURCH ADMINISTRATION II.—This course considers the principles of program planning, policy development, and leadership enlistment and training in the church. 3 s.h. MR. WALTON

147. THE URBAN COMMUNITY.—The urban environment viewed in relation to the people, institutions, organizational structure and constitutive forces giving rise to urbanism as a way of life. 2 s.h. MR. REGEN

148. CHURCH FINANCE.—A seminar to consider the principles of budget making, stewardship instruction, and every member enlistment in church support. 2 s.h. MR. WALTON

149. PARISH AND COMMUNITY RESEARCH AND ANALYSIS.—A seminar to consider the techniques of community surveys, research, and analysis. Attention is given to the use of research data in program planning and in checking on the effectiveness of church work. 2 s.h. MR. WALTON

150. THE RURAL PASTOR AND HIS WORK.—A study of the qualifications of the rural pastor and his task. Attention is given to the supervisory methods and material available for the pastor's use and to the current trends in rural life and their influence upon church work. 3 s.h. MR. WALTON

151. THE RURAL CHURCH.—A study of rural conditions and the place of the church as a community institution and the problems and situations met in local church management and supervision. 3 s.h. MR. WALTON

152. PARISH EVANGELISM.—A study seeking to prepare the student to plan a comprehensive and continuous program of evangelism for the local church. 2 s.h.

MR. QUEEN

153. AUDIO-VISUAL AIDS.—The principles and methods of audio-visual aids in the program of the church. 2 s.h.

MR. WALTON AND OTHERS

154. THE URBAN CHURCH.—A consideration of the function, nature, program, and administration of the effective city church and of the urban minister's distinctive task. 2 s.h.

MR. REGEN

155. CHURCH POLITY: COMPARATIVE AND DENOMINATIONAL.—This is a study of the polity of the different denominations in which the students may serve, based upon the disciplines and practices of the respective denominations. 2 s.h.

MR. QUEEN, MR. REGEN AND OTHERS

(The plan of this course is for the class to meet as a unit one hour a week for the study of the common interests of the denominations; for the other hour the class is divided into groups on the following plan:

a. THE POLITY OF THE METHODIST CHURCH.—The study will be based upon the Methodist Discipline.

MR. QUEEN

b. THE POLITY OF THE BAPTIST CHURCHES.

c. THE POLITY OF THE CONGREGATIONAL-CHRISTIAN CHURCHES.

d. THE POLITY OF THE PRESBYTERIAN CHURCHES.

MR. REGEN

(Courses in the polity of other churches will be arranged as needed.)

157. GROUP WORK.—The principles and skills required in group work as they apply to discussion groups, forums, panels, guided neighborhood conversation groups, social work, community organization and action. 2 s.h.

MR. WALTON AND OTHERS

FIELD WORK CREDIT.—Granted on written recommendation of the Director of Field Work upon the completion of satisfactory work in C.A. 23, the completion of Field Work Seminar, 142, 144, or 145, and the performance of successful field work. 1 s.h. (Available only in the senior year.)

CHRISTIAN EDUCATION

22. PHILOSOPHY OF CHRISTIAN EDUCATION.—A basic study of the implications of theology and of educational theory for a philosophy of Christian education. 3 s.h.

MR. RICHEY

25. EDUCATIONAL THEORY AND PRACTICE IN THE CHURCH.—An overall and introductory view of the educational functions of the church. Consideration is given to the work of organization, administration and supervision of the church school. 2 s.h.

MR. KALE

125. THEOLOGICAL AND PSYCHOLOGICAL INTERPRETATIONS OF MAN.—An inquiry into the relations of theological and psychological views of man's nature, predicament, and deliverance. 3 s.h.

MR. RICHEY

129. CHRISTIAN GROWTH OF PERSONS.—Psychological foundations of Christian nurture of children and youth. 2 s.h.

MR. RICHEY

131. PSYCHOLOGY OF RELIGION.—A study of psychological aspects of the religious life. 2 s.h.

MR. RICHEY

158. CHRISTIAN EDUCATION AND THE COMMUNITY.—A study of the principles, practices, methods and materials of Christian Education as related to the total community life. 3 s.h.

MR. KALE

159. CHRISTIAN FAITH AND HIGHER EDUCATION.—An examination of current philosophies of religion in higher education, with reference to student religious work and college teaching of religion. 2 s.h.

MR. RICHEY

160. EVANGELISM IN THE CHURCH SCHOOL.—A study of the place of evangelism in the work of the church school. 2 s.h.

MR. KALE

161. THEORIES, TYPES AND TECHNIQUES OF TEACHING.—A study of the main principles underlying religious teaching with an examination of the different methods of teaching. 3 s.h. MR. KALE

162. METHODS AND MATERIALS OF CHRISTIAN EDUCATION.—A consideration of the principal administrative problems of the church school, of the various concepts of the curriculum, and an examination of existing curricula, their nature, use and value. 3 s.h. MR. KALE

163. WORSHIP AND DRAMA.—Worship in its bearings upon the educational functions of the Christian religion. The use of drama in Christian education with the creation of dramatic programs of worship and drama writing and production. 3 s.h. MR. KALE

164. CHRISTIAN EDUCATION OF CHILDREN.—The organization and administration of the work of the church with children of the nursery, kindergarten, primary and junior age groups. 2 s.h. MR. KALE

165. CHRISTIAN EDUCATION OF YOUTH.—The organization and administration of the youth program in the local church. 2 s.h. MR. KALE

166. CHRISTIAN EDUCATION OF ADULTS.—A study of the needs of adults; the materials, methods, and principles of organization for the Christian education of adults. 2 s.h. MR. KALE

167. THEOLOGY AND THE LAY MIND.—Formulation and communication of the Christian faith, for the mind of today. (For Middlers and Seniors.) 3 s.h. MR. RICHEY

169. THEORIES OF CHRISTIAN EDUCATION.—A critical investigation of current theories of Christian education. 3 s.h. MR. RICHEY

SEE ALSO: H.R. 126.

PASTORAL CARE

26. INTRODUCTION TO PASTORAL CARE.—A study of the background, needs and methods of pastoral work and personal counseling. 2 s.h. MR. DICKS

170. SEMINAR IN PASTORAL CARE.—For students preparing for full-time pastoral ministry, hospital chaplaincy, industrial chaplaincy, ministry to older people, or work with young people. Practicum. Prerequisite: P.C. 26 or consent of instructor. 2 s.h. class and 1 s.h. clinic. MR. DICKS

171. PASTORAL CARE PRACTICUM I.—A study of pastoral calls and interviews. Particularly for students serving churches or working in clinical situations. Prerequisite: P.C. 26 or consent of instructor. 2 s.h. class and 1 s.h. clinic. MR. DICKS

172. PASTORAL CARE PRACTICUM II.—Advanced pastoral care for students serving churches or working in clinical situations. Prerequisite: P.C. 26 or P.C. 171. 3 s.h. MR. DICKS

173. RELIGION AND HEALTH.—The study of the relation of body and mind and of the religious resources for health through counseling and worship. Prerequisite: P.C. 26 or consent of instructor. 2 s.h. MR. DICKS

174. PERSONAL COUNSELING.—A study of formal personal counseling for those going into the ministry, religious education, and work with college students. 2 s.h. [Open to a limited number of first-year students.] MR. DICKS

176. PASTORAL CARE AND SOCIAL WORK.—Lectures by various specialists and visits to social agencies to orient the minister in relation to other specialists working with individuals and to familiarize him with social service resources. 2 s.h. [Open to a limited number of first-year students.] MR. DICKS

177. ADVANCED SEMINAR IN PASTORAL CARE.—Continuation of 170, which, however, is not a prerequisite. Emphasis upon hospital ministry. Practicum. Prerequisite: P.C. 26 or consent of instructor. 2 s.h. class and 1 s.h. clinic. MR. DICKS AND OTHERS

PREACHING

29-30. SERMON CONSTRUCTION—THEORY AND PRACTICE.—An investigation of the theory of preaching (first semester). Detailed work in practice preaching and a clinical session each week on the application of theory (second semester). 4 s.h. MR. CLELAND, MR. CARLTON AND MR. HODGES

181. PRACTICAL PROBLEMS IN PREACHING.—Analysis of selected sermons and discussion of problems facing the preacher in the pulpit. Prerequisite: Pr. 29 and 30. 2 s.h. MR. CLELAND AND MR. CARLTON

183. EXPOSITORY PREACHING—OLD TESTAMENT.—The exegesis and exposition of selected Old Testament passages for homiletical purposes. 2 s.h. MR. CLELAND

184. EXPOSITORY PREACHING—THE PAULINE EPISTLES.—A study for homiletical purposes of the religious experience and theology of Saint Paul and its influence on ethical theory and practice. 3 s.h. MR. CLELAND

185. EXPOSITORY PREACHING—NON-BIBLICAL.—An evaluation of drama, poetry and fiction for homiletical purposes. 3 s.h. MR. CLELAND

186. EXPOSITORY PREACHING—THE JOHANNINE WRITINGS.—The exegesis and exposition of the Gospel and the Epistle of John for homiletical purposes. 2 s.h. MR. CARLTON

187. POST-REFORMATION PREACHING.—A study of the theological trends and significant personalities in the preaching tradition from the sixteenth century to the present. 2 s.h. MR. CARLTON

SEE ALSO: C.H. 136.

WORSHIP

178. CORPORATE WORSHIP.—The theory and practice of the common worship of the Church, using various manuals of worship. One hour to be arranged. 3 s.h. MR. RUDIN

180. CHURCH MUSIC I.—The evaluation and use of hymns with an introduction to the elements of musical notation and the rudiments of conducting. 2 s.h. MR. YOUNG

189. CHURCH MUSIC II.—A study of the larger and more advanced forms of the Church's musical literature and the administrative problems encountered in maintaining a progressive program of music in the Church. 2 s.h. MR. YOUNG

SPEECH

171. EFFECTIVE SPEAKING.—Fundamentals of preparation and delivery for effective communication. Offered in four sections. 2 s.h. MR. RUDIN

132. PUBLIC SPEAKING.—Selected problems of preparation and delivery, based upon individual needs. For students deficient in speech and preaching, by recommendation of the instructors concerned. 2 s.h. MR. RUDIN

134. LITURGICAL READING.—Practice in reading the liturgical materials of the pastoral ministry: Scriptures, prayers, and the rites and seasonal services in the *Methodist Book of Worship*. 2 s.h. MR. RUDIN

V. Senior Seminars

In the third year each B.D. candidate will take one Senior Seminar, yielding 2 s.h. credit. No student may enroll in more than one Senior Seminar without special permission of the Dean. Senior Seminars will not yield Graduate School credit, nor be open to special students.

Enrollment in each Senior Seminar shall be normally not more than twelve. No Senior Seminar need be conducted for an enrollment of less than five students. Each Senior Seminar will be in charge of a Chairman. Not less than two instructors will participate in each Seminar. General supervision of all Senior Seminars will be exercised by a standing committee of the Faculty.

The work done in each Senior Seminar should be equivalent to that done in a normal 2 s.h. course, with reading based upon a prepared reading list and a substantial paper or written project report.

FIRST SEMESTER

61. THE CHRISTIAN FAITH AND ITS PROCLAMATION.—2 s.h.
MR. CUSHMAN, MR. RUDIN, MR. CARLTON
65. PRACTICAL VALUES OF BIBLICAL RESEARCH.—2 s.h.
MR. CLARK, MR. WALTON, MR. BROWNLEE
67. THE NEW TESTAMENT AS MATERIALS FOR TEACHING.—2 s.h.
MR. RICHEY, MR. ANDERSON
70. PASTORAL CARE AND PREACHING.—2 s.h. MR. DICKS, MR. CARLTON

SECOND SEMESTER

62. WESTERN CHRISTIANITY AND NON-CHRISTIAN FAITHS.—2 s.h.
MR. PETRY, MR. MYERS, MR. FOSTER
64. THE OLD TESTAMENT AS MATERIALS FOR TEACHING.—2 s.h.
MR. KALE, MR. STINESPRING, MR. ANDERSON
66. THE CHRISTIAN CHURCH AND SOCIAL CHANGE.—2 s.h.
MR. BEACH, MR. LACY, MR. SCHAFER

Not offered 1957-58.

63. THE ECUMENICAL MOVEMENT IN THE MODERN CHURCH.—2 s.h.
68. CHRISTIAN EXPERIENCE AND CONTEMPORARY LIFE.—2 s.h.
69. THE WORSHIPING CHURCH.—2 s.h.

Cost, Residential Arrangement, and Student Aid



Fees and Cost

THE University tuition charge is \$325.00 per semester. Scholarships covering this amount are granted to all Divinity School students. Other charges are as follows:

Fees per semester:

General Fee	\$ 50.00
Approximate cost of meals per semester (estimated).....	200.00
Room per semester (double room).....	87.50
Total per semester.....	<u>\$337.50</u>

The "General Fee" is in lieu of all special charges, and includes the following fees: Matriculation, Medical, Library, Damage, Commencement, and Diploma. Divinity School students may secure admission to all regularly scheduled University athletic contests held on the University grounds during the entire academic year by payment of the athletic fee of \$10.00 per year plus any Federal taxes that may be imposed. This fee is payable in the fall semester.

A fee of \$1.00 will be charged for any student-initiated change in courses after the beginning of classes each semester.

LATE REGISTRATION

Students matriculating in either semester at a date later than that prescribed in the catalogue shall pay to the Treasurer of the University a penalty of \$5.00.

Living Accommodations

Women graduate students occupy Epworth Hall, which provides facilities for fifty-seven women, on the Woman's College Campus. Dining hall facilities are not available in Epworth Hall. Meals may be had in the cafeterias of the Unions. The rental charge for a single room is \$250.00 for the academic year, or \$125.00 each semester. The rental charge for a double room is \$400.00 for the academic year, or \$100.00 for each occupant each semester. There are no lodging facilities on the campus for married couples. Such students should plan to

arrange for rooms or apartments in private homes in the city. The Housing Bureau maintains a file of rooms and apartments listed with it for rental. Students may use this file as an aid to locating suitable lodging accommodations.

The Men's Graduate Center is available to men of the graduate and professional schools. It has facilities for four hundred men, complete with lounges, study rooms, recreational rooms, post office and dining hall. The rooms are equipped for two persons and the rental charge for a double room is \$350.00 for the academic year, or \$87.50 for each occupant each semester.

Rooms are rented for a period of not less than one semester, or in the case of a medical student, one quarter, and without special arrangements, the rate is \$1.00 per day with a minimum charge of \$25.00.

Room reservations are made through the Housing Bureau only after official acceptance for admission to the University. A \$25.00 room deposit is required of each applicant before a room reservation is made. After a room is reserved, the deposit will not be refunded to accepted applicants who fail to enter the University. The initial room deposit is effective during the student's residence in the University if attendance is continuous in regular academic years. This deposit will be refunded to resident students under the following conditions:

- a. Within thirty days after the student has been graduated.
- b. Upon withdrawal from the University, provided written notice is received in the Housing Bureau by August 1, for cancellation of a reservation for the fall semester; and not later than January 15, for cancellation of a reservation for the spring semester.
- c. When the reasons requiring withdrawal are beyond the student's control.

No refund is made until the occupant has checked out of his room through the Housing Bureau and has settled all of his account with the Treasurer.

A resident student, in order to retain his room for the succeeding academic year, must make application at the office of the Housing Bureau for confirmation of the reservation in accordance with the plan that is published during the school year.

Any exchange of rooms must be arranged at the Housing Bureau. Persons exchanging rooms without the approval of the Housing Bureau will be subject to charges for both rooms.

The authorities of the University do not assume responsibility for the persons selected as roommates. Each student is urged to select his roommate when the room is reserved.

Beds and mattresses (39"x 74"), tables, chairs, dressers, mirrors, and window shades are furnished by the University. The student supplies

linens, blankets and pillows. Rugs, totaling not more than 54-square-feet, study lamps and curtains are permissible, and if desired, are furnished by the room occupants.

Regulations governing the occupancy of rooms will be supplied directly from the Housing Bureau when room reservations are made. Occupants are expected to abide by these regulations.

DINING HALLS

Food service on both the Woman's College Campus and the West Campus is cafeteria style. The cost of meals approximates \$1.75 to \$2.25 per day depending upon the need and taste of the individual. The dining facilities on the West Campus include three cafeterias with multiple choice menus and, in addition, the Oak Room, where full meals and *a la carte* items are served. The Men's Graduate Center has a cafeteria open at meal hours, and a coffee lounge which is open until 11:00 P.M. The prices are the same as in the West Campus Union.

Student Aid

Duke University remits its regular tuition charges to all students enrolled in the Divinity School. In recognition of this, students are expected to render occasional services such as the teaching of Church School classes and responding to calls for particular services. Financial aid, over and above this, is available only in the form of grants-in-aid and work scholarships. These funds come from sources described on pages 39 through 42 of this catalogue. Those appointed to such work agree to give ten weeks' service during the summer months to a church to which they are assigned. In return they receive their board and room for the period of their summer service and amounts varying up to \$700. By special arrangement a student may be assigned to a church for five weeks' work with one-half the stated remuneration. This plan provides an opportunity for earning a large part of the year's expenses, while at the same time assuring the student valuable experience in religious leadership.

In most cases students will be expected to be able to finance themselves for the first semester of work in the Divinity School; those who show that they can carry their school work satisfactorily are then eligible for various forms of financial assistance.

Students who must have additional income over and above their summer's earnings may secure part-time employment during the academic year. They are strongly urged, however, to make their arrangements so that they will not have duties which will prevent their taking the fullest advantage of the educational and cultural opportunities of the Divinity School.

Students or wives desiring employment with the University should apply to The Director of Personnel, Duke Station, Durham, N. C.; Office 01 Allen Building.

FIELD WORK SUPERVISION

The Department of Field Work is maintained to help students receiving financial aid to secure work opportunities where they may render service for such aid. Their work will be supervised so that their experiences may be part of their ministerial training. Students are also helped to secure work opportunities for the experience to be gained. All students working under the department have their board, room, laundry, and travel expenses provided by the charge served. Certain courses are required of all students engaged in field work and are designed to prepare them for the work in which they engage. All students assigned to field work must maintain satisfactory grades and attitudes.

All students working under the Duke Endowment or similar aid are required to attend the Christian Convocation unless excused in writing by the Dean on recommendation of the Director of Field Work.

LOAN FUNDS

Divinity School students who have satisfactorily completed one semester's work are eligible to apply for loans from the University Loan Funds. Such applications should be filed on the approved forms in the Office of the Secretary of Duke University within the first week of each semester.

ENDOWED SCHOLARSHIP FUNDS

Certain special scholarship funds have been established, the income of which is available for students wishing to secure training in preparation for the Christian ministry.

These scholarships are all awarded on the basis of service performed in a local church, thus providing experience as well as financial aid for the student.

N. EDWARD EDGERTON FUND

In 1939 Mr. N. Edward Edgerton of Raleigh, North Carolina, an alumnus of Duke University of the Class of 1921, a member of the Board of Trustees of the University and a member of the Committee on the Divinity School, established the N. Edward Edgerton Fund. The award is limited to students who are candidates for the B.D. degree.

P. HUBER HANES SCHOLARSHIP

Mr. P. Huber Hanes of Winston-Salem, North Carolina, an alumnus of Duke University of the Class of 1900 and a member of the

Board of Trustees, has established an annual scholarship yielding the sum of approximately \$600.00.

ELBERT RUSSELL SCHOLARSHIP

In 1942 the Alumni Association of the Divinity School established a scholarship fund in honor of Elbert Russell, Dean Emeritus of the Divinity School and for a number of years Professor of Biblical Theology.

W. R. ODELL SCHOLARSHIP

In 1946 the Forest Hills Methodist Church, Concord, North Carolina, established a scholarship fund in memory of W. R. Odell, for many years a member of the Board of Trustees of the University.

MYERS PARK SCHOLARSHIP FUND

The Myers Park Scholarship Fund was established in 1948 by contributions of the members of the congregation of the Myers Park Methodist Church, Charlotte, N. C.; the income to be used for the benefit of the Divinity School.

HERSEY E. SPENCE SCHOLARSHIP

In 1947 the Steele Street Methodist Church of Sanford, North Carolina, established a scholarship fund in honor of Professor Hersey E. Spence, a former pastor of the congregation, the income to be used for scholarship aid to deserving students of the Divinity School.

GEORGE M. IVEY SCHOLARSHIP FUND

This fund was established December 8, 1948, by gift of George M. Ivey, of Charlotte, North Carolina, an alumnus of Duke University of the Class of 1920, the income to be used for scholarship aid for deserving students in the Divinity School.

LAURINBURG CHRISTIAN EDUCATION FUND

This fund was established December 11, 1948, by gift through the Methodist College Advance Fund, the income to be used for scholarship aid for worthy students of the Divinity School.

JESSE M. ORMOND SCHOLARSHIP FUND

In 1948 the North Carolina Conference established a fund in honor of Professor Jesse M. Ormond, who for many years was Director of Field Work in the Divinity School and Professor of Practical Theology.

THOMAS JEFFERSON FINCH SCHOLARSHIP

In 1955 Mr. George Davis Finch, '24, and Mr. Brown Faucette Finch, '54, established an annual scholarship in the amount of six hundred and fifty dollars a year in memory of Mr. Thomas Jefferson Finch, Trinity College Class of 1884, who was the father and grandfather of the donors.

R. ERNEST ATKINSON LEGACY

In 1952, under the will of the Reverend R. Ernest Atkinson, of Richmond, Virginia, a member of the Trinity College Class of 1917, a sum of money was given to the Divinity School, the income to be used for the benefit of the School.

DUKE ENDOWMENT GRANTS-IN-AID

The Duke Endowment provides aid to North Carolina rural Methodist churches for operation and maintenance. There are available from this source grants-in-aid to provide additional pastoral service. At the present rate of income approximately seventy students can be employed as assistant pastors in this service during the summer. Terms of these grants are given on page 38 of this catalogue.

ANNUAL SCHOLARSHIPS

In addition to the endowed scholarship and funds provided by the Duke Endowment, the Divinity School receives annual scholarship funds from the following organizations and individuals: Myers Park Methodist Church, Charlotte, N. C.; the South Carolina Conference of the Methodist Church; The First Methodist Church, Morehead City, N. C., The First Methodist Church, Kingsport, Tenn.

These scholarships are awarded on the same basis as the endowed scholarships.

THE METHODIST CHURCH

The Methodist Church makes a substantial contribution to the Divinity School by designating a certain percentage of its World Service offerings to the School.

The North Carolina and the Western North Carolina Conferences, direct a certain percentage of the College Sustaining Fund to the Divinity School.

THE METHODIST COLLEGE ADVANCE

The Divinity School was a participant in the North Carolina Methodist College Advance with askings of \$200,000.00 for scholarship aid and extension of the School's service to ministers. Many local churches and individuals have shared in the raising of this significant sum. Specific contributions are the Henry Harrison Jordan Loan Library, the James A. Gray Fund, the J. M. Ormond Fund, the Laurinburg Christian Education Fund, the Hersey E. Spence Fund, and the Myers Park (Charlotte, N. C.) Methodist Church Fund.

THE JAMES A. GRAY FUND

In 1947 Mr. James A. Gray of Winston-Salem, North Carolina, presented the fund which bears his name to the Divinity School for

use in expanding and maintaining its educational services in behalf of North Carolina churches and pastors. From this fund three scholarships are awarded, two in city church work, and one in rural church work. The Divinity School Seminars and a number of scholarships in the School for Approved Pastors are also supported by income from this gift, as well as the James A. Gray Lectures.

NATIONAL METHODIST SCHOLARSHIPS

Two National Methodist Scholarships, having a cash value of \$500 each, are made available annually by the General Board of Education of the Methodist Church to two outstanding students in the first year class. Awards are granted by the General Board of Education upon the recommendation of the faculty. Students receiving these awards are required to participate in a two-week expense paid travel seminar during which they visit and study all of the boards and agencies of the Methodist Church located in Nashville, Chicago, New York City, Washington, and Philadelphia.

FRANK S. HICKMAN PREACHING AWARD

The Frank S. Hickman award in preaching, amounting to \$90.00 in cash for the best sermons preached in an annual competition, was established in 1950.

The Summer Session of The Divinity School Summer, 1957

Class enrollments will be controlled as occasion may arise so as to secure a fairly even distribution among the courses offered in each term.

First Term: June 11-July 17

S102 (DS). CHRISTIAN FAITH AND THE PROBLEM OF EVIL.—Analysis of the questions raised for faith by tragedy, suffering and/or evil, examination of answers proposed in Christian and philosophical literature. (For advanced students.) 9:20-10:40. 3 s.h. MR. FOSTER

S105 (DS). LIFE OF PAUL.—A study of Paul's life on the basis of Acts and the letters of Paul, emphasizing the permanent values in Paul's work and his contribution to the world. 7:40-9:00. 3 s.h. MR. MYERS

S190 (DS). THE CHRISTIAN CRITIQUE OF COMMUNISM.—Analysis of and alternatives to the dynamic secular ideology from a religious standpoint. 11:00-12:20. 3 s.h. MR. LACY

S199 (DS). SOCIAL THOUGHT IN AMERICAN CHRISTIANITY.—A survey of Christian social thought since 1830. 7:40-9:00. 3 s.h. MR. SMITH

Second Term: July 19-August 24

S167 (DS). THEOLOGY AND THE LAY MIND.—Formulation and communication of the Christian faith, for the mind of today. (For advanced students.) 7:40-9:00. 3 s.h. MR. RICHEY

S170 (DS). SEMINAR IN PASTORAL CARE.—For students preparing for full-time pastoral ministry, hospital chaplaincy, industrial chaplaincy, ministry to older people, or work with young people. Practicum. 1:40-3:00. 3 s.h. Mr. Dicks

S181 (DS). PRACTICAL PROBLEMS IN PREACHING.—Analysis of selected sermons and discussion of problems facing the preacher in the pulpit. 11:00-12:20. 3 s.h. (For advanced students.)

S197 (DS). CULTURAL HISTORY OF PALESTINE.—A study of significant contributions to civilization made in ancient, medieval, and modern Palestine with special reference to the three religions, Judaism, Christianity, and Islam. 9:20-10:40. 3 s.h. Mr. STINESPRING

A CLINIC IN PREACHING

A Clinic in Preaching will be offered, July 1-13, 1957, under the chairmanship of Professor Cleland, for thirty ministers who have graduated from theological school between 1941 and 1953. No academic credit will be given. A special folder will be issued on this new venture.

Enrollment 1956-57



Fall and Spring Semesters

Aills, Lovell Roy (A.B., Asbury College) Huntington, W. Va.
Alexander, Gayle Thomas (A.B., Asbury College) Tionesta, Pa.
Alexander, Jerry Marvin (A.B., Duke University) Canton, N. C.
Alexander, Joseph Culbreth (A.B., Duke University) Kinston, N. C.
Allen, Julia Mae (B.A., Millsaps College) Quitman, Miss.
Amon, William Ernest (B.A., Randolph-Macon College) Fayetteville, N. C.
Arnold, Frank Aubrey, Jr. (A.B., Huntingdon College) Montgomery, Ala.
Askew, Reuben Samuel (A.B., Elon College) Elon College, N. C.
Babington, Thomas Macaulay (B.S., Mississippi Southern College) Franklinton, La.
Bailey, James H. (A.B., Wofford College) Elm City, N. C.
Baldridge, Robert Lee (B.A., University of Richmond) Red Oak, N. C.
Bayliss, Weldon C. (B.S., University of North Carolina) Bahama, N. C.
Beard, Douglas Roach, Jr. (A.B., Duke University) Charlotte, N. C.
Beaty, Fred Donald (A.B., Duke University) Belmont, N. C.
Berrier, Paul Raymond (A.B., Duke University) Thomasville, N. C.
Berry, William Preston (B.A., Randolph-Macon College) Staunton, Va.
Bideaux, Rene Orville (B.S., North Carolina State College) Meadville, Pa.
Black, Bobby Carl (A.B., Kentucky Wesleyan College) Owensboro, Ky.
Blackburn, Charles Edward (B.A., Athens College) Santa Fe, Tenn.
Blocker, Richard Riddick (A.B., Wofford College) Charleston, S. C.
Bock, James Ray (B.A., Randolph-Macon College) Norfolk, Va.
Bourner, Frank Edward (B.A., Marshall College) Huntington, W. Va.
Bowman, Giles Oren (A.B., High Point College) Asheboro, N. C.
Bradley, Erman Franklin (B.S., Wofford College) Gastonia, N. C.
Bridger, Donald Gene (A.B., High Point College) Charlotte, N. C.
Brose, Reinhard (Predigerseminar Frankfurt) Berlin, Germany
Buckey, Charles William (A.B., Davidson College) Charlotte, N. C.
Bullock, Evander Burns (A.B., High Point College) Marion, S. C.
Bunn, Paul Grayson (A.B., High Point College) Troy, N. C.
Burnett, James Palmer (B.A., Millsaps College) Ellisville, Miss.
Burrier, Joyce Lee (A.B., Queens College) Charlotte, N. C.
Burton, John Matthew (A.B., High Point College) Reidsville, N. C.
Burtriam, Danny Welch (A.B., Birmingham-Southern College) Gadsden, Ala.
Byers, Morris Jennings (A.B., Wofford College) Caroleen, N. C.
Bynum, Frank Bundy, Jr. (A.B., Duke University) Darlington, S. C.
Byrd, Julian LeGrande, Jr. (A.B., University of Florida) Seville, Fla.
Byrd, Natham Hooks (A.B., High Point College) Wilmington, N. C.
Carr, Marvin Homer III (B.S., West Virginia University) Elkins, W. Va.
Cheyne, William Andrew (B.A., University of North Carolina) Fayetteville, N. C.
Clapp, Rosser Lee (A.B., Elon College) Garner, N. C.
Clark, James Norwood (A.B., Duke University) Cairo, Ga.
Clark, Wilfong W., Jr. (A.B., Wofford College) Atlantic, N. C.
Claytor, Robert Brown (B.A., Berea College) Kingsport, Tenn.
Cocke, Emmett Winbern, Jr. (B.A., Emory and Henry College) Gretna, Va.
Coleman Howard Luther (A.B., High Point College) Concord, N. C.
Corr, Laughton Lee (B.A., Randolph-Macon College) Richmond, Va.
Crews, Don Wayne (A. B., Duke University) Lakeland, Fla.
Crim, Frank Sprint (B.A., Randolph-Macon College) Winchester, Va.
Cross, William Kelly III (B.A., The Citadel) Cross, S. C.
Crow, Earl Pickett, Jr. (A.B., Duke University) Atlanta, Ga.
Davis, Donald Purgold (B.A., Randolph-Macon College) Seaford, Va.
DeLacure, Dennis Randolph (A.B., M.A., Florida State University) Leesburg, Fla.
Dooley, Edna (A.B., University of North Carolina) Johnson City, Tenn.
Doser, William Richard (B.A., Baldwin-Wallace College) Cleveland, Ohio
Dryden, Archie Wallace (A.B., High Point College) New Church, Va.
Dyar, William Heller (A.B., High Point College) Raleigh, N. C.
Epperson, James Sidney (A.B., Wofford College) New Bern, N. C.
Eskridge, James Brink (B.S., Millsaps College) Sherman, Miss.
Eubanks, Roy Lamar (A.B., High Point College) Lockhart, S. C.
Ferguson, Avery Arthur (A.B., High Point College) Lexington, N. C.
Fidler, George Arthur (A.B., Catawba College) Burlington, N. C.
Fisher, Arthur Mickey (A.B., Wofford College) Union, S. C.
Flewellen, Barbour Harrison (B.A., M.S., University of Virginia) Charlottesville, Va.
Flowers, Henry Franklin (A.B., Birmingham-Southern College) Spartanburg, S. C.
Forward, Robert Benjamin (A.B., Boston University) Saugus, Mass.

Freeman, Mary Catherine (B.A., Florida State University) Jacksonville, Fla.
 Fulcher, John Rodney (A.B., Duke University) Greenville, N. C.
 Gandy, William Fonville (A.B., Birmingham-Southern College) Birmingham, Ala.
 Garriss, Horace Stanford (A.B., Atlantic Christian College) Apex, N. C.
 Gibbons, Robert H., Jr., (A.B., Duke University) St. Georges, Del.
 Giles, Woodrow Adams (B.A., Lynchburg College) Danville, Va.
 Gilland, Jimmy Conrad (A.B., High Point College) Siler City, N. C.
 Gilley, Fred T. (B.A., Randolph-Macon College) Clover, Va.
 Glass, Joseph Conrad, Jr. (B.S., North Carolina State College) Raleigh, N. C.
 Goodin, Charles Erwood (A.B., West Virginia Wesleyan College) Wellsburg, W. Va.
 Goodwin, James William (A.B., Birmingham-Southern College) Chalkville, Ala.
 Gore, Albert Nottly, Jr. (B.A., Millsaps College) Mathiston, Miss.
 Groseclose, Henry Monroe (B.S., East Tennessee State College) Appalachia, Va.
 Hailey, James Russell (A.B., Elon College) Leaksville, N. C.
 Hall, Ronnie Lee (A.B., Duke University) Winston-Salem, N. C.
 Hancock, Oros Leo, Jr. (A.B., Queens College) Charlotte, N. C.
 Hanks, Donald Kirk (A.B., Southwestern College) Great Falls, Mont.
 Hanson, Corliss Victor (B.S., University of Alabama) Panama City, Fla.
 Harrell, Stanley Graham (A.B., University of Maryland) Hyattsville, Md.
 Hastings, Robert C. (B.A., Randolph-Macon College) Norfolk, Va.
 Hawkins, Johnnie Everette (A.B., High Point College) Charlotte, N. C.
 Haynes, Donald Williams (A.B., High Point College) Jamestown, N. C.
 Head, Sidney (B.A., Millsaps College) Columbia, Miss.
 Henley, Earle Erwin, Jr. (B.A., Randolph-Macon College) Waynesboro, Va.
 Henley, James Walton, Jr. (B.A., Emory University) Nashville, Tenn.
 Herring, Wade Wilkes (A.B., Wofford College) Waterboro, S. C.
 Hilton, Roger Edward (B.S., East Tennessee State College) Johnson City, Tenn.
 Hinds, Patsy Emma (B.A., Memphis State College) Memphis, Tenn.
 Hobbs, Herbert Gray (B.A., Randolph-Macon College) Hampton, Va.
 Hodges, Louis Wendell (B.A., Millsaps College) Durham, N. C.
 Hodgins, Hubert Howard (A.B., Wofford College) Wilmington, N. C.
 Hoffmann, Theodore Schott (A.B., Duke University) Dunbar, W. Va.
 Holmes, Conrad Merritt (A.B., Catawba College) Charlotte, N. C.
 Hood, Charles Ellsworth (A.B., Syracuse University) Freehold, N. Y.
 Hook, Wade Franklin (B.D., Southern Seminary) Chapel Hill, N. C.
 Houk, Mary Margaret (A.B., Greensboro College) Sanford, Fla.
 Howle, Richard Arden (A.B., Wofford College) Hartsville, S. C.
 Hughes, Harold Hasbrouck, Jr. (B.A., Randolph-Macon College) Danville, Va.
 Irwin, Robert Lynn (B.A., University of Tennessee) Knoxville, Tenn.
 Jarrett, Richard Bailey (B.A., Marshall College) Beckley, W. Va.
 Jones, Charles Edwin (A.B., Southern Methodist University) Memphis, Tenn.
 Jones, Jewel Anne (A.B., High Point College) Charlotte, N. C.
 Jones, Robert Ted (A.B., Emory and Henry College) Mayberry, W. Va.
 Jones, Thomas Charles, Jr. (A.B., Wofford College) Sumter, S. C.
 Kase, Mark (A.B., Kentucky Wesleyan College) Louisville, Ky.
 Keating Harold Julian (B.S., University of Tampa) Tampa, Fla.
 Kelly, Kayle Kesling (B.A., Lynchburg College) Alta Vista, Va.
 Key, Joel Thomas (A.B., Asbury College) Greensboro, N. C.
 Kilburn, Stanley Collins (B.S., Memphis State College) Union City, Tenn.
 King, Arnold Kimsey, Jr. (B.A., University of North Carolina) Chapel Hill, N. C.
 Kirkpatrick, David Willis (A.B., Duke University) Canton, N. C.
 Kittrell, David Lewis (B.S.J., Southern Methodist University) Dallas, Tex.
 Knight, William Elwood (B.A., Randolph-Macon College) Richmond, Va.
 Knoch, Elmo Albert (A.B., Hendrix College) Little Rock, Ark.
 Lane, William Anderson (A.B., University of North Carolina) Macon, Ga.
 Lavengood, James William (B.A., Michigan State College) Charlotte, Mich.
 Lawing, Luther Harold, Jr. (A.B., University of North Carolina) Charlotte, N. C.
 Lazenby, Ashby Louis (B.A., Lynchburg College) Bedford, Va.
 Littiken, John Perry (A.B., Elon College) Greensboro, N. C.
 Lore, Auburn William (A.B., Morris Harvey College) Chesapeake, W. Va.
 Love, Robert Hugh (B.A., Marshall College) Point Pleasant, W. Va.
 Lowdermilk, William P. (A.B., Emory University) Norman, N. C.
 Luck, James Wilton (A.B., Randolph-Macon College) Highland Springs, Va.
 Lugar, Lawrence Edward (B.A., Lynchburg College) Roanoke, Va.
 Lyndon, George Earl, Jr. (A.B., High Point College) Thomasville, N. C.
 McCord, William Keith (B.A., University of Tennessee) Alamo, Tenn.
 McMillan, Samuel Duncan, Jr. (A.B., Duke University) Wilmington, N. C.
 Madren, Thomas Wheeler (A.B., Elon College) Albemarle, N. C.
 Mann, William Howard (B.A., Bethel College) Mackenzie, Tenn.
 Mansfield, Jack Percia (A.B., Duke University) Cumberland, Md.
 Marks, Luther Milton (B.S., Concord College) Beckley, W. Va.
 Martin, Richard Kelly (B.A., Lynchburg College) Lynchburg, Va.
 Martinson, Jacob Christian, Jr. (B.A., Huntingdon College) Montgomery, Ala.
 Mason, Randall Chaplain (A.B., Duke University) Paterson, N. J.
 Matthews, Joseph Carson, III (A.B., Duke University) Raleigh, N. C.
 Maxfield, James Robert (A.B., Kentucky Wesleyan College) Hampton, Ky.
 Means, Jerry A. (A.B., Centenary College) Ida, La.
 Medlin, Boyce (B.A., Wake Forest College; B.D., Duke Divinity School) Durham, N. C.
 Midgett, Peleg Dameron, III (A.B., Duke University) Englehard, N. C.
 Montgomery, Norwood Powell (A.B., Randolph-Macon College) Seaford, Va.

Morris, Joseph Russell (B.A., Emory and Henry College) Pound, Va.
 Mullikin, Melvin Eugene (A.B., Furman University,) Greenville, S. C.
 Murr, James Muse (B.S., Davidson College) Thomasville, N. C.
 Myrick, Cecil Kenneth (B.A., Randolph-Macon College) Albemarle, N. C.
 Nance, Mabel Atlanta (B.S., Arkansas State College) Jonesboro, Ark.
 Nates, James Herbert, Jr. (A.B., University of South Carolina) Columbia, S. C.
 Needham, Edwin Garber (A.B., High Point College) Winston-Salem, N. C.
 Newton, John Leon (A.B., High Point College) McColl, S. C.
 Northington, James Allen (A.B., High Point College) Davisboro, Ga.
 Northrop, Richard Armstrong (A.B., Duke University) Hermon, N. Y.
 O'Kelly, Wendell Vernon (A.B., McMurtry College) Albany, Tex.
 Olmstead, Wayne Carr (A.B., Hendrix College) Heber Springs, Ark.
 Osteen, Edward Powell (A.B., Wofford College) Rockingham, N. C.
 Parrish, Billy Hiram (A.B., Duke University) Siler City, N. C.
 Parsous, Weldon Thomas, Jr. (A.B., The Citadel) Charleston, S. C.
 Pearce, Harvey W. (A.B., Lenoir-Rhyne College) Hickory, N. C.
 Peden, Harold Glenn (B.A., Millsaps College) Terry, Miss.
 Penberthy, Robert John (A.B., Duke University) Wilmette, Ill.
 Perkins, Merrill Gilford (A.B., High Point College) Greensboro, N. C.
 Petty, John Albert (A.B., Duke University) Garland, N. C.
 Phillips, Henry Arthur (B.A., Emory and Henry College) Roxboro, N. C.
 Pope, Thomas Arnold (A.B., Duke University) Stokes, N. C.
 Quick, William Kellon (B.A., Randolph-Macon College) Gibson, N. C.
 Quigley, Horace Gilbert (A.B., Atlantic Christian College) Ayden, N. C.
 Rath, Lisle Frederick (A.B., Duke University) Fulton, N. Y.
 Reece, John Ray (B.A., Emory and Henry College) Sunset Hills, Va.
 Reed, Clark Sutcliffe (A.B., Davidson College) Ft. Lauderdale, Fla.
 Reed, John Edwards (B.A., University of Arkansas) Mena, Ark.
 Regnier, Robert Atwood (A.B., Hendrix College) Crossett, Ark.
 Rife, David (B.A., Marshall College) Beckley, W. Va.
 Riley, Jasper Otis (B.A., Lynchburg College) Lynchburg, Va.
 Roach, Edwin Lee (A.B., Berea College) Maryville, Tenn.
 Robinson, George Parks (A.B., Duke University) Charlotte, N. C.
 Russell, Robert Glenn, Jr. (A.B., High Point College) Greensboro, N. C.
 Sain, Daniel Dennis (A.B., Lenoir-Rhyne College) Belwood, N. C.
 Sartin, Charles William (A.B., Guilford College) Stokesdale, N. C.
 Scott, Charles Richard (B.A., Lynchburg College) Lynchburg, Va.
 Seft, Robert Harry (A.B., Agricultural and Mechanical College of Texas) Amarillo, Tex.
 Seifert, William Eugene, III (A.B., Wofford College) Spartanburg, S. C.
 Selph, Stacy (A.B., Florida Southern College) Lakeland, Fla.
 Shelton, Gary James (B.A., Lynchburg College) Amherst, Va.
 Shelton, John Ellis III (A.B., Birmingham-Southern College) Birmingham, Ala.
 Shiun, Gerald Harris (A.B., Duke University) Marshville, N. C.
 Simmons, Lewis Bill (A.B., Elon College) Albemarle, N. C.
 Simontou, Charles Alison, Jr. (B.S., and M.S., Northwestern University) Covington, Tenn.
 Smith, Dwight Moody, Jr. (A.B., Davidson College) Spartanburg, S. C.
 Smith, Grover Artis, Jr. (B.S., Florida Southern College) Spartanburg, S. C.
 Smith, Henry Ralph (B.S., University of Alabama) Birmingham, Ala.
 Smith, Jack Courtney (A.B., Catawba College) Concord, N. C.
 Smith, James Weldon, III (B.A., Yale College) Fredericksburg, Va.
 Sparks, Charles Edgar (A.B., High Point College) Raleigh, N. C.
 Speight, James Braxton (A.B., Asbury College) Littleton, N. C.
 Spillman, John Perry, Jr. (A.B., Duke University) Charlotte, N. C.
 Spivey, David Berris, Jr. (A.B., Wofford College) Conway, S. C.
 Stanford, James Carlton (A.B., Asbury College) Altamahaw, N. C.
 Stark, Rufus Haywood, II (A.B., Duke University) Greenville, N. C.
 Stone, William Denver (B.S., Concord College) Sharon, W. Va.
 Streetman, Robert Francis (B.A., Millsaps College) Durant, Miss.
 Summey, Raymond Clifton (A.B., High Point College) Dallas, N. C.
 Tanner, George Alfred (A.B., Hendrix College) Fordyce, Ark.
 Thomas, Arthur Chester (A.B., Colgate University) Auburn, N. Y.
 Thomas, James Benjamin, Jr. (A.B., Birmingham-Southern College) Martinsville, Va.
 Thomas, William Alan (A.B., Duke University) Mathews, Va.
 Thompson, Emerson McLean, Jr. (A.B., Duke University) Ca-Vel, N. C.
 Tisdale, Walter Eugene (A.B., High Point College) Saxapahaw, N. C.
 Tyson, Vernon Cephus (A.B., Guilford College) Biscoe, N. C.
 Upton, Edwin Thompson (B.A., Millsaps College) Yazoo City, Miss.
 Volskis, Wilhelm Siegfried (A.B., Randolph-Macon College) Richmond, Va.
 Walker, Odell Franklin (A.B., High Point College) Rockingham, N. C.
 Walters, William Dabney (B.A., Lynchburg College) Lynchburg, Va.
 Ward, Gerould Allen, Jr. (B.A., Lynchburg College) Lynchburg, Va.
 Webster, William Osborne (B.A., Emory and Henry College) Axton, Va.
 Weekley, George Clyde (B.S., in Ed., University of Alabama) Perdido, Ala.
 Weeks, Thomas Wallace (A.B., Duke University) Enfield, N. C.
 Wesley, James Lee Rue (A.B., Union College) Corbin, Ky.
 White, Christian (B.A., Pembroke State College) Burlington, N. C.
 White, James Samuel (A.B., University of North Carolina) Statesville, N. C.
 Whitted, Mary Jo (A.B., High Point College) Canton, N. C.
 Whorton, Tennyson Lucious, Jr. (B.A., Southern Methodist University) Kerens, Tex.
 Wier, Kenneth Rule (B.A., University of Tennessee) Knoxville, Tenn.

Wilkinson, Howard Ray (A.B., Wofford College) Charlotte, N. C.
 Wolf, Sheldon Harry (A.B., McMurry College) Abilene, Tex.
 Womack, Sam Jones, Jr. (A.B., Florida Southern College) Lakeland, Fla.
 Worley, William Earl (B.A., Stetson University) Huntington, W. Va.
 Wragg, Paul H., Jr. (B.S., Florida State University) Roxboro, N. C.
 Wright, Edward Turner (B.S., Randolph-Macon College) London Bridge, Va.
 Yarbrough, Charles Curtis (A.B., Duke University) Concord, N. C.
 Young, Charles Milton (A.B., Berea College) Bald Creek, N. C.
 Young, John LeRoy, Jr. (B.A., Lynchburg College) South Boston, Va.
 Young, William Curtis (B.A., Elon College) Durham, N. C.

Students Enrolled in the Department of Religion of The Graduate School of Arts and Sciences 1956-57

Benjamin, Walter W. (B.A., Hamline University; B.D., Garrett Biblical Institute), Pipestone, Minn.
 Brown, Jesse H. (A.B., Elizabethtown College; B.D., Crozer Theological Seminary), Brownstown, Pa.
 Brown, Milton P. (A.B., Birmingham-Southern; B.D., Louisville Presbyterian Seminary), Bardstown, Ky.
 Chalker, William H. (B.A., Maryville College; B.D., McCormick Theological Seminary), Birmingham, Ala.
 Clegg, James L., Jr. (A.B., Mercer University; B.D., Th.M., Southeastern Baptist Theological Seminary), Dalton, Ga.
 DeSanto, Pasquale (B.S., Temple University; B.D., Louisville Presbyterian Theological Seminary), Newton Square, Pa.
 Eybers, Ian Heinrich (B.A., B.D., M.A., University of Pretoria; M.Th., Theological Seminary, Stellenbosch, S.Afr.), Brooklyn, Pretoria, Union of S. Africa.
 Foshee, Charles N. (A.B., Duke University; B.D., Th.M., Columbia Theological Seminary), Rocky Mount, N. C.
 Gardner, Robert T. (A.B., Mercer University; B.D., Duke Divinity School), McDonough, Ga.
 Harper, Miles Douglas, Jr. (B.A., Mississippi Southern College; B.D., Columbia Theological Seminary), Hattiesburg, Miss.
 Hill, Samuel S., Jr. (B.A., Georgetown College; B.D., Southern Baptist Theological Seminary; M.A., Vanderbilt), Florence, Ky.
 Hilliard, Russell B. (A.B., Valdosta State; B.D., Southeastern Baptist Theological Seminary), Sparks, Ga.
 Hix, Douglas W. (A.B., Davidson College; B.D., Columbia Theological Seminary), LaGrange, Ga.
 Hoyt, William R., III (A.B., Davidson College; B.D., Columbia Theological Seminary), Pulaski, Va.
 Hudgins, Walter E. (A.B., Duke University; B.D., Duke Divinity School), Danville, Va.
 Insko, William Robert (A.B., M.A., University of Kentucky; M.R.E., College of the Bible; B.D., Graduate School of Theology, Sewanee), Chapel Hill, N. C.
 Jones, Barney L. (A.B., Duke University; B.D., Yale Divinity School), Durham, N. C.
 Klein, Bert Alan (Rabbi, Talmudic College; Reformatus Collegium), Raleigh, N. C.
 Langford, Thomas A. (A.B., Davidson; B.D., Duke Divinity School), Charlotte, N. C.
 Lightfoot, Neil R. (A.B., A.M., Baylor University), Winston-Salem, N. C.
 Moorefield, David R. (B.A., Presbyterian College, S. C.; B.D., Columbia Theological Seminary; Th.M., Princeton Theological Seminary), Lancaster, S. C.
 Mueller, David L. (B.A., Baylor University; B.D., Southern Baptist Theological Seminary), Louisville, Ky.
 Overton, James H., Jr. (A.B., University of North Carolina; B.D., Duke Divinity School), Raleigh, N. C.
 Palmer, Ralph T. (B.A., Texas Christian University; B.D., Brite College of the Bible; M.S., Yale University), Dallas, Tex.
 Ping, Charles J. (A.B., Southwestern at Memphis; B.D., Louisville Presbyterian Theological Seminary), Brooklyn, N. Y.
 Robinson, Charles K. (B.S., Arizona State College; B.D., A.M., Southern Methodist University), Phoenix, Ariz.
 Rogers, David C. (B.A., Johnson Bible College; B.D., M.A., Butler University), Fairfax, Ala.
 Rogers, Isabel W. (A.B., Florida State University; M.A., University of Virginia; M.R.E., Assembly's Training School), Tallahassee, Fla.
 Shriver, George H., Jr. (A.B., Stetson University; B.D., Southeastern Seminary), Jacksonville, Fla.
 Snowden, Armon Carl (A.B., Elizabethtown College; B.D., Crozer Theological Seminary), Bethlehem, Pa.

Summer Session 1956

(WITHOUT DUPLICATION)

Armstrong, James M., Jr. (A.B., Wofford College), Belmont, N. C.
 Bailey, William Ray (B.A., Emory and Henry College), Tazewell, Va.
 Barnes, Fred D. (Southeastern Baptist Theological Seminary) Wake Forest, N. C.

Bedsworth, Ellis Jennings (B.S., East Carolina College), Marshallberg, N. C.
 Currin, Beverly Madison, Jr. (A.B., Elon College), Burlington, N. C.
 James, Robert Earl (A.B., Wofford College), Florence, S. C.
 McLeod, George B. (A.B., Lenoir-Rhyne College), Lenoir, N. C.
 Martin, Murray Anthony (A.B., Florida Southern College), Bradenton, Fla.
 Pollock, Henry Morrison (A.B., Asbury College), Kernersville, N. C.
 Turner, Richard W. (B.A., University of North Carolina), Charlotte, N. C.
 Vieth, Roger Gordon (Duke University), Ill.
 Walter, William N. (B.A., Lycoming College), Union Springs, N. Y.
 Wilson, Barrett Dallas (B.S., North Carolina State College), Raleigh, N. C.

Enrollment Summary

Divinity School students, 235; Graduate School students 30; Summer Session students (without duplication), 13. Total: 278.

INSTITUTIONS REPRESENTED

Duke University, 38; High Point College, 26; Randolph-Macon College, 18; Wofford College, 17; Lynchburg College, 11; Millsaps College, 9; Emory and Henry College, 7; Southeastern Baptist Theological Seminary, 5.

The following 8 each: Elon College, University of North Carolina.

The following 6 each: Asbury College, Birmingham-Southern College.

The following 4 each: Columbia Theological Seminary, Davidson College, Florida Southern College, Hendrix College, Marshall College, Southern Methodist University.

The following 3 each: Berea College, Catawba College, Florida State University, Kentucky Wesleyan College, Louisville Presbyterian Seminary, Lenoir-Rhyne College, North Carolina State College, University of Alabama, University of Tennessee.

The following 2 each: Atlantic Christian College, The Citadel, Concord College, Crozer Theological Seminary, East Tennessee State College, Emory University, Guilford College, Huntingdon College, McMurry College, Memphis State College, Queens College.

The following 1 each: Arkansas State College, Assembly's Training School, Athens College, Baldwin-Wallace College, Baylor University, Bethel College, Boston University, Butler University, Centenary College, Colgate University, East Carolina College, Furman University, Garrett Biblical Institute, Greensboro College, Lycoming College, McCormick Theological Seminary, Michigan State College, Mississippi Southern College, Morris Harvey College, Northwestern University, Pembroke College, Princeton Theological Seminary, Prediger Seminar der Methodistenkirche, Reformatus Collegium, Stetson University, Graduate School of Theology, Sewanee, Southern Seminary, Southwestern College, Syracuse University, Texas Agricultural and Mechanical College, Theological Seminary, Stellenbosch, Union College, University of Arkansas, University of Florida, University of Maryland, University of Richmond, University of South Carolina, University of Tampa, University of Virginia, Vanderbilt University, West Virginia University, West Virginia Wesleyan College, Wake Forest College, Yale College, Yale Divinity School, Yale University.

DENOMINATIONS REPRESENTED

1956-57

(Summer Sessions 1956 Included)

<i>Denomination</i>	<i>Divinity</i>	<i>Graduate</i>	<i>Total</i>
Methodist	226	6	232
Presbyterian	2	10	12
Baptist	3	7	10
Congregational Christian	9		9
Disciples of Christ	1	2	3
Episcopalian	1	1	2
Evangelical and Reformed	1	1	2
Wesleyan Methodist	2		2
Assembly of God	1		1
Lutheran	1		1
Church of the Brethren		1	1
Church of Christ		1	1
Jewish		1	1
Nazarene	1		1
	<hr/> 248	<hr/> 30	<hr/> 278

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STATES: 25

FOREIGN COUNTRIES: 2

BULLETIN
OF
DUKE UNIVERSITY



Catalogue Number

1956-1957

ANNOUNCEMENTS FOR 1957-1958

VOLUME 29

June, 1957

NUMBER 8

Annual Bulletins

For GENERAL BULLETIN of Duke University, apply to *The Registrar*, Duke University, Durham, N. C.

For BULLETIN OF UNDERGRADUATE INSTRUCTION, apply to *The Registrar*, Duke University, Durham, N. C.

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For BULLETIN OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES, apply to *The Dean of the Graduate School*, Duke University, Durham, N. C.

For BULLETIN OF THE SCHOOL OF FORESTRY, apply to *The Dean of the School of Forestry*, Duke University, Durham, N. C.

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For BULLETIN OF THE DIVINITY SCHOOL, apply to *The Dean of the Divinity School*, Duke University, Durham, N. C.

For BULLETIN OF THE SUMMER SESSION, apply to *The Director of the Summer Session*, Duke University, Durham, N. C.

Published by Duke University monthly except in July, August, September, and December. Entered as second-class matter March 25, 1929, at the Post Office of Durham, North Carolina, under the Act of August 24, 1912.

DUKE UNIVERSITY

GENERAL CATALOGUE



ANNOUNCEMENTS FOR 1957-1958



THE CHAPEL

BULLETIN
OF
DUKE UNIVERSITY



CATALOGUE NUMBER

1956-1957

ANNOUNCEMENTS FOR 1957-1958

DURHAM, NORTH CAROLINA
1957

"I request . . . that great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination, and application evincing a wholesome and real ambition for life."

—JAMES B. DUKE.

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Calendar of the Colleges

1957

- September 12. Thursday, 7:30 P.M. Assembly for all entering freshmen; Freshman Orientation begins.
- September 12. Thursday, 7:30 P.M. Assembly for transfer students entering Trinity College and the College of Engineering.
- September 16. Monday. Registration and matriculation of former students of Trinity College and the College of Engineering, who have not pre-registered.
- September 17. Tuesday. Registration and matriculation of new students with advanced standing. Woman's College.
- September 18. Wednesday. Final registration of pre-registered students.
- September 19. Thursday. Fall semester classes begin.
- October 22. Tuesday. Examination in English Usage.
- November 4. Monday. Last day for reporting mid-semester grades.
- November 27. Wednesday, 12:30 P.M. Thanksgiving recess begins.
- December 2. Monday, 8:00 A.M. Classes are resumed.
- December 11. Wednesday. Founders' Day.
- December 21. Saturday, 12:30 P.M. Christmas recess begins.

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- January 6. Monday, 8:00 A.M. Classes are resumed.
- January 11. Saturday, 12:30 P.M. Fall semester classes end.
- January 14. Tuesday. Final examinations begin.
- January 24. Friday. Final examinations end.
- January 28. Tuesday. Registration and matriculation of new students.
- January 29. Wednesday. Last day for matriculation for the spring semester.
- January 30. Thursday. Spring semester classes begin.
- March 12. Wednesday. Last day for reporting mid-semester grades.
- March 22. Saturday, 12:30 P.M. Spring recess begins.
- March 31. Monday, 8:00 A.M. Classes are resumed.
- May 16. Friday, 5:00 P.M. Spring semester classes end.
- May 19. Monday. Final examinations begin.
- May 29. Thursday. Final examinations end.
- May 31. Saturday. Commencement begins.
- June 1. Sunday. Commencement Sermon.
- June 2. Monday. Graduating Exercises.

History



DUKE UNIVERSITY is built about a group of colleges which have their roots deep in the past. It was founded more than one hundred years ago when a number of earnest citizens from Randolph and adjacent counties assembled in a log school house to organize an educational society. They wished to provide lasting support for the local academy founded a few months before by an energetic son of North Carolina, Brantley York.

Moved by "no small share of philanthropy and patriotism," these men set forth their belief "that ignorance and error are the bane not only of religious but also of civil society" and that they "rear up almost an impregnable wall between man and the happiness he so ardently pants after." On that basis they formally adopted a constitution for the Union Institute Society. Thus in February, 1839, the academy became Union Institute. Twelve years later the Institute was reorganized as Trinity College. In 1892 it was moved from the fields of Randolph County to the growing city of Durham. Thirty-two years later the College grew into Duke University. With increasing enrollment and the development of specialized needs the Woman's College was formed in 1925 and the College of Engineering in 1938.

As the University developed around the core of the colleges, the Graduate School of Arts and Sciences expanded in number of students and in areas of instruction and research; the School of Law of Trinity College became the Duke University School of Law; and other professional schools were established. The Divinity School was organized in 1926, the School of Medicine and the School of Nursing in 1930, and the School of Forestry in 1938.

From academy to university the basic principles have remained constant. The University motto, *Eruditio et Religio*, reflects a fundamental faith in the union of knowledge and religion, the advancement of learning, the defense of scholarship, the love of freedom and truth, a spirit of tolerance, and a rendering of the greatest service to the individual, the state, the nation, and the church. Through changing generations of students the objective has been to encourage each individual to achieve to the extent of his capacities an understanding and appreciation of the world in which he lives, his relationship to it, his opportunities, and his responsibilities.

Government



I. THE INDENTURE OF TRUST BY WHICH THE UNIVERSITY WAS CREATED

Among the provisions of James B. Duke's Indenture of Trust was an educational institution to be known as Duke University, to the building and support of which he made provision at the time of execution of the Indenture and later by additions thereto by the operation of his Will. In respect to Duke University the Indenture contains the following provisions:

I. (In Article FOURTH) The Trustees hereunder are hereby authorized and directed to expend as soon as reasonably may be not exceeding Six Million Dollars of the corpus of this trust in establishing at a location to be selected by them within the State of North Carolina an institution of learning to be known as Duke University, for such purpose to acquire such lands and erect and equip thereon such buildings according to such plans as the Trustees may in their judgment deem necessary and adopt and approve for the purpose to cause to be formed under the laws of such state as the Trustees may select for the purpose a corporation adequately empowered to own and operate such properties under the name of Duke University as an institution of learning according to the true intent hereof, and to convey to such corporation when formed the said lands, buildings and equipment upon such terms and conditions as that such corporation may use the same only for such purposes of such university and upon the same ceasing to be so used then the same shall forthwith revert and belong to the Trustees of this trust as and become a part of the corpus of this trust for all the purposes thereof.

However, should the name of Trinity College, located at Durham, North Carolina, a body politic and incorporate, within three months from the date hereof (or such further time as the Trustees hereof may allow) be changed to Duke University, then, in lieu of the foregoing provisions of this division "FOURTH" of this Indenture, as a memorial to his father, Washington Duke, who spent his life in Durham and whose gifts, together with those of Benjamin N. Duke, the brother of the party of the first part, and of other members of the Duke family, have so largely contributed toward making possible Trinity College at that place, he directs that the Trustees shall expend of the corpus of this trust as soon as reasonably may be a sum not exceeding Six Million Dollars in expanding and extending said University, acquiring and improving such lands, and erecting, removing, remodeling and equipping such buildings, according to such plans, as the Trustees may adopt and approve for such purpose to the end that said Duke University may eventually include Trinity College as its undergraduate department for men, a School of Religious Training, a School for Training Teachers, a school of Chemistry, a Law School, Co-ordinate College for Women, a School of Business Administration, a Graduate School of Arts and Sciences, a Medical School and an Engineering School, as and when funds are available.

II. (In Article FIFTH) Thirty-two per cent of said net amount not retained as aforesaid for addition to the corpus of this trust shall be paid to that Duke University for which expenditures of the corpus of the trust shall have been made by the Trustees under the "Fourth" division of this Indenture so long as its name shall be Duke University and it shall not be operated for private gain, to be utilized by its Board of Trustees in defraying its administration and operating expenses, increasing and improving its facilities and equipment, the erection and enlargement of buildings and the acquisition of additional acreage for it, adding

to its endowment or in such other manner for it as the Board of Trustees of said institution may from time to time deem to be of its best interests, provided that in case such institutions shall incur any expense or liability beyond provisions already in sight to meet same, or in the judgment of the Trustees under this Indenture be not operated in a manner calculated to achieve the results intended hereby the Trustees under this Indenture may withhold the whole or any part of such percentage from said institution so long as such character of expense or liabilities or operation shall continue, such amounts so withheld to be in whole or in part either accumulated and applied to the purposes of such University in any future year or years, or utilized for the other objects of this Indenture, or added to the corpus of this trust for the purpose of increasing the principal of the trust estate, as the Trustees may determine.

III. (In Article SEVENTH) I have selected Duke University as one of the principal objects of this trust because I recognize that education, when conducted along sane and practical, as opposed to dogmatic and theoretical, lines, is, next to religion, the greatest civilizing influence. I request that this institution secure for its officers, trustees, and faculty, men of such outstanding character, ability, and vision as will insure its attaining and maintaining a place of real leadership in the educational world, and that great care and discrimination be exercised in admitting as students only those who previous records shows a character, determination, and application evincing a wholesome and real ambition for life. And I advise that the courses at this institution be arranged, first, with special reference to the training of preachers, teachers, lawyers and physicians, because these are most in the public eye, and by precept and example can do most to uplift mankind, and second, to instruction in chemistry, economics, and history, especially the lives of the great of earth, because I believe that such subjects will most help to develop our resources, increase our wisdom and promote human happiness.

IV. (In Article THIRD) As respects any year or years and any purpose or purposes for which this trust is created (except the payments hereinafter directed to be made to Duke University) the Trustees in their uncontrolled discretion may withhold the whole or any part of said incomes, revenues and profits which would otherwise be distributed under the "Fifth" division hereof, and either (1) accumulate the whole or any part of the amount so withheld for expenditures (which the Trustees are hereby authorized to make thereof) for the same purpose in any future year or years, or (2) add the whole or any part of the amounts so withheld to the corpus or the trust, or (3) pay, apply and distribute the whole or any part of said amounts to and for the benefit of any one or more of the other purposes of this trust, or (4) pay, apply and distribute the whole or any part of said amounts to or for the benefit of any such like charitable, religious or educational purpose within the State of North Carolina or the State of South Carolina, or any such like charitable hospital purpose which shall be selected therefor by Trustees called for the purpose, complete authority and discretion in and for such selection and utilization being hereby given the Trustees in the premises.

2. THE CHARTER OF THE UNIVERSITY

SECTION 1. That A. P. Tyer, J. H. Southgate, B. N. Duke, G. A. Oglesby, V. Ballard, J. A. Long, J. F. Bruton, J. N. Cole, F. A. Bishop, J. G. Brown, C. W. Toms, J. W. Alspaugh, W. R. Odell, J. A. Gray, F. Stikeleather, Kope Elias, S. B. Turrentine, P. H. Hanes, T. F. Marr, G. W. Flowers, M. A. Smith, R. H. Parker, W. J. Montgomery, F. M. Simmons, O. W. Carr, R. A. Mayer, N. M. Jurney, Dred Peacock, B. B. Nicholson, W. G. Bradsher, E. T. White, T. N. Ivey, J. B. Hurley, R. L. Durham, W. C. Wilson, and their associates and successors shall be, and continue as they have been, a body politic and corporate under the name and style of DUKE UNIVERSITY, and under such name and style shall have perpetual existence and are hereby invested with all the property and rights of property which now belong to the said corporation, and said corporation shall henceforth and perpetually, by the name and style of DUKE UNIVERSITY, hold and use all the authority, privileges, and possessions it had or exercised under any former title and name, and be subject to all recognized legal liabilities and obligations now outstanding against said corporations.

SEC. 2. That such corporation is authorized to receive and hold by gift, devise, purchase or otherwise, property, real and personal, to be held for the use of said University and its dependant schools or for the use of either or both (as may be designated in the conveyance or will).

SEC. 3. That the Trustees shall be thirty-six in number, of whom twelve shall be elected by the North Carolina Conference of the M. E. Church, South; twelve by the W. N. C. Conference of the said church; and twelve by the graduates of said University; *Provided, however,* That no person shall be elected a Trustee till he has first been recommended by a majority of the Trustees present at a regular meeting; and the Trustees shall have power to remove any member of their body who may remove beyond the boundary of the State or who may refuse or neglect to discharge the duties of a Trustee. The term of office of Trustees shall be six years, and they shall be so arranged that four Trustees shall be elected by each Conference and four by the graduates every two years. The Trustees shall regulate by bylaws the manner of election of the Trustees to be chosen by the graduates. Should there exist a vacancy by death, resignation, or otherwise of any Trustee, the same shall be filled for the unexpired term by the Board of Trustees. That the present Trustees shall continue and remain in office during the term for which they have been heretofore respectively elected.

SEC. 4. That the said corporation shall be under the supervision, management and government of a president and such other persons as said Trustees may appoint; the said president, with the advice of other persons so appointed, shall from time to time make all needful rules and regulations for the internal government of said University and prescribe the preliminary examinations and terms and conditions on which pupils shall be received and instructed.

SEC. 5. That said Trustees shall have power to make such rules, regulations, bylaws not inconsistent with the Constitution of the United States and of this State, as may be necessary for the good government of said University and management of the property and funds of the same.

SEC. 6. That the Trustees shall have power to fix the time of holding their annual and other meetings, to elect a president and professors for said University, to appoint an executive committee to consist of seven members, which committee shall control the internal regulations of said University and fix all salaries and emoluments, and to do all other things necessary for an institution of learning not inconsistent with the laws of this State and of the United States.

SEC. 7. That the Faculty and Trustees shall have the power of conferring such degrees and marks of honor as are conferred by colleges and universities generally; and that five Trustees shall be a quorum to transact business.

SEC. 8. That all laws and parts of laws or of the charter heretofore granted which are in conflict with this act are hereby repealed.

SEC. 9. That this act shall be in force from and after its ratification and acceptance by the Board of Trustees.

3. THE BYLAWS OF THE UNIVERSITY

1. AIMS OF THE UNIVERSITY. The aims of Duke University are to assert a faith in the eternal union of knowledge and religion set forth in the teachings and character of Jesus Christ, the son of God; to advance learning in all lines of truth; to defend scholarship against all false notions and ideals; to develop a Christian love of freedom and truth; to promote a sincere spirit of tolerance; to discourage all partisan and sectarian strife; and to render the largest permanent service to the individual, the state, the nation, and the church. Unto these ends shall the affairs of this University always be administered.

2. THE UNIVERSITY TRUSTEES, THEIR MEETINGS AND THEIR OFFICERS. The Alumni Trustees, nominated by the Board as provided for in the Charter, are elected by the Alumni Association. The officers of the Board are chairman, vice-chairman, and recording secretary. They are elected by the Trustees at their annual meeting to serve one year or until their successors are elected and qualify. The chairman calls to order and presides at all meetings of the Board, calls extraordinary meetings when, in his judgment, such meetings may be necessary, and represents

the Trustees at public meetings of the University. He is ex-officio member of the Executive Committee. In the absence of the chairman, the vice-chairman calls to order and presides over meetings of the Board, but does not perform any of the other duties of the chairman unless ordered to do so by the Board or the Executive Committee. The recording secretary records the minutes of all the meetings, does the correspondence, and is the custodian of the records and other documents that may belong to the Board.

3. **THE EXECUTIVE COMMITTEE.** The Executive Committee consists of seven members, three of them from the University Trustees, including the chairman of the Board ex-officio, three from the Endowment Trustees, and the President of the University ex-officio. It performs the duties set out for it in the charter—namely, controls the internal regulations of the University and fixes all salaries and emoluments. It has all the powers of the Board of Trustees in the interims between meetings of the Board of Trustees except the nomination of Trustees and election of members of the Executive Committee; however, appointment of officers of the University by the Executive Committee is subject to the approval of the University Trustees. The Executive Committee is expressly empowered to appoint an Investment Committee and to give to such Committee such powers and duties, as in the judgment of the Executive Committee, may seem fit. The Executive Committee is elected by the University Trustees, three of them on nomination of the Endowment Trustees, and the Committee elects its own officers who are chairman and recording secretary. It meets once a month (unless otherwise determined by the Committee) and oftener when necessary and by its own resolution sets its time and date of meetings except that special meetings are called by its chairman upon three or more days written or telegraphic notice to the members of the Committee. The Committee, through its chairman, once a year makes a report to the annual meeting of the University Trustees.

4. **OFFICERS OF THE UNIVERSITY.** The officers of the University are a president, three vice-presidents, a business manager, a comptroller, a treasurer, a dean of the University, and such other deans as may be needed, a recording dean or registrar, and a secretary who is also secretary of the faculty. There may be also a chancellor and a vice-chancellor. Whenever it may seem wise, one person may hold more than one office.

PRESIDENT. The President of the University calls and presides at all the meetings of the Faculties, except as otherwise provided in these bylaws, and sees that the laws and regulations of the Executive Committee and the Trustees affecting the administration and work of the University are carried out. He has direction of the discipline and work of the University and, except as otherwise provided in these bylaws, appoints all committees of the Faculties. Anything in these bylaws to the contrary notwithstanding, the President may veto any action of any faculty or committee or agency thereof. However, in every instance he shall submit to the appropriate faculty, committee or agency in writing his reasons for setting aside their action, and the secretary of such faculty shall record his reasons in the record book of such faculty. The President makes an annual report to the Trustees of the work, conditions, and needs of the University, and of other matters that may be of concern to it or to the cause of higher education. He nominates all members of the Faculties and represents them at all public meetings of the University. He is an ex-officio member of the Executive Committee and acts, unless the Trustees designate the Chancellor of the University for the purpose, as a medium of communication between the University Trustees and the Endowment Trustees.

CHANCELLOR. There may be a Chancellor of the University. If the Trustees appoint such an officer, he shall be selected for this office because of his long and faithful service to the University. Such an officer, if appointed, is a high officer of the University. He may be designated by the Trustees as the medium of communication between the University Trustees and the Endowment Trustees and, when he is so designated, the President does not act in such a capacity. He is available, when requested by the President, to render all possible services in an advisory capacity. He has such other duties as may be delegated to him from time to time by the Trustees.

VICE-CHANCELLOR. There may be a Vice-Chancellor of the University. If the

Trustees appoint such an officer he shall be selected because of his long and faithful service to the University. When requested by the Chancellor, he performs the duties designated to the Chancellor by the Trustees. He is available, when requested by the Chancellor or President, to render all possible services in an advisory capacity. He has also such other duties as may be delegated to him from time to time by the Trustees.

VICE-PRESIDENTS. The three Vice-Presidents of the University have supervision of the work of the University in the divisions of (a) education, (b) public relations, and (c) student life. In the absence of the President, Vice-Presidents in the above order may perform such duties of the President as may demand immediate attention.

BUSINESS MANAGER. The Business Manager has the custody of all property of the University except cash and securities. He is responsible to an Administrative Committee and through such committee to the Trustees, either directly or through the Executive Committee, for all matters pertaining to the business affairs of the University except the investment of funds and is required to make monthly reports through such Administrative Committee to the Executive Committee and annual reports through the Administrative Committee to the Trustees concerning his accounts and the property in his charge. Such Administrative Committee is composed of not less than three nor more than five persons, three of whom are the President of the University as Chairman, the Business Manager and a Vice-President selected from time to time by the Trustees or the Executive Committee. The Executive Committee has power to determine, within the limit set, the number to be added to or removed from membership in the committee and in its judgment to make selection of the persons to be so added or so removed. The Business Manager receives annually from the Comptroller a budget of expected receipts and disbursements and upon the approval of the Administrative Committee submits a budget to the Executive Committee for consideration and adoption. Upon such adoption he, acting through the Comptroller, is responsible primarily for the operation of the budget. He nominates to the Executive Committee any and all assistants required by him to do well the duties of his office. The Business Manager shall be required to give bond in such amount as may be designated by the Trustees or the Executive Committee for the faithful performance of his duties.

COMPTROLLER. The Comptroller prepares annually, or causes to be prepared, a budget of expected receipts and disbursements and submits same to the Business Manager for the approval of the Administrative Committee and submission to the Executive Committee for consideration and adoption. He is responsible primarily to the Business Manager for the operation of the budget and assists him in every way when called upon so to do, and has such other powers and duties as the title of his office may imply, including responsibility for the financial records of the University. The Comptroller shall be required to give bond in such amount as may be designated by the Trustees or the Executive Committee for the faithful performance of his duties.

TREASURER. The Treasurer has primary responsibility for the care and custody of all securities and for the receipt and disbursement of all funds of the University. He makes an annual report of his accounts to the Trustees and such reports as may be required of him from time to time by the Executive Committee. He makes reports also to the Business Manager monthly and oftener when required. He nominates to the Executive Committee any and all assistants required by him to do well the duties of his office including the nomination of one or more Assistant Treasurers, which officers shall be responsible primarily to him. The Treasurer and his assistants shall be required to give bond in such amount as may be designated by the Trustees or the Executive Committee for the faithful performance of their duties.

SECRETARY. The Secretary of the University has custody of the corporate seal of the University and affixes and attests same when circumstances require and the Trustees or the Executive Committee so direct. He is secretary of the Faculty also, attends its meetings and makes permanent records of actions and transactions at such meetings. He has such other duties and responsibilities as his title suggests and may be delegated to him from time to time by the appropriate authorities. There may be appointed also, from time to time, such Associate and/or Assistant

Secretaries as may be required to perform the duties of the Secretary in his absence or inability to act.

5. FACULTIES. The University Faculty is composed of:

- (a) The President and the Secretary of the University and such officers designated by the President as primarily responsible for instruction and research; and
- (b) All persons of the rank of full instructor and above who are engaged in work for which recognized University degrees are awarded, and also members of the faculty emeriti.

The University Faculty in cooperation with the President and officers of the University, is responsible for the conduct of instruction and research in the various schools and colleges of the University.

In furtherance thereof this faculty:

- (a) Enacts such regulations as it deems necessary to carry on instruction and research, promote faculty and student welfare, advance the standard of work and otherwise develop the scholarly aims of the University;

- (b) Recommends to the University Trustees:

- (1) Such persons as it deems fit to receive degrees or other marks of distinction; and

- (2) The establishment of any new degree or diploma;

- (c) Consults with and advises the President on matters of general University policy within its competence, in order to assist him in carrying out his duties as the chief administrative officer of the University and as the means of communication between the Trustees and the administrative officers and Faculty;

- (d) Receives such information on the affairs of the University as is necessary for the exercise of its functions;

- (e) Subject to the reserved power of control by the Trustees and the President, determines policies to which the faculties of all schools and colleges and all committees and councils thereof are expected to conform;

- (f) In extraordinary circumstances, when normal channels of communication are not available, may by formal action request a conference between its representatives and representatives of the Board of Trustees or of the Executive Committee of the University. Under normal conditions the President of the University is the liaison between the University Faculty and the governing boards of the University or the committees thereof;

- (g) Has as its Chairman the President of the University and as its Secretary the Secretary of the University;

- (h) Meets regularly in October and February and before the June commencement; meets at other times on the call of the President or of the Vice-President in the Division of Education, or on the written request of twenty members. At the first meeting of each year the Faculty receives from the President a report on the state of the University;

- (i) May exercise its functions through such committees as it may choose to set up. The University Council is a standing committee of the Faculty, subject to its regulations under these bylaws.

The University Council consists of fifteen members as follows: The President of the University; the Vice-President in the Division of Education; three persons, who need not be members of the University Faculty, appointed annually by the President; and ten members elected from and by the University Faculty. The Faculty members are selected from the schools and colleges as follows: from the School of Medicine and the School of Nursing, one member; from the Divinity School, the School of Forestry, and the School of Law, one member; from the College of Engineering, Trinity College and the Woman's College, and the Graduate School of Arts and Sciences, three members; and from the University Faculty at large, five members. The members are elected by such methods and for such terms as the University Faculty may by regulation prescribe.

The Council has three officers: A Chairman who normally presides; a Vice-Chairman who presides in the absence of, or at the request of, the Chairman;

and a Secretary. The President of the University is ex-officio Chairman of the Council. The Council elects annually by ballot the Vice-Chairman and Secretary from the Faculty members of the Council. The three officers constitute an agenda committee and appoint members of committees set up by the Council in cases where membership is not otherwise prescribed by Council action. Faculty members and officers of the University who are not Council members may serve on Council Committees. The Council meets at such times as it elects. Special meetings are called by the Chairman, by the Vice-Chairman, or, at the request of three of its members, by the Secretary. A majority of the members shall constitute a quorum.

The University Council serves as an advisory body on matters of general University policy and interest.

Through the University Council the President endeavors to keep the University Faculty informed upon major matters of University policy, and expects the Council to bring to his attention any matters affecting the general interests and policies of the University.

In the exercise of its advisory function the Council, at the request of the President, a faculty or department, or any individual of the faculties or administration, or on its own initiative, may:

- (i) Consider any subject within its competence and report recommendations thereon to the President or to the University Faculty;
- (ii) Study and report to the President or to the University Faculty on matters within its competence relating to any division of the University subject to the jurisdiction of the President or University Faculty, whenever the Council, by a three-fourths vote, decides that such study is in the best interests of the University.

The Council makes periodic reports in writing to the University Faculty on its activities.

The Undergraduate Faculty Council is composed of: The President of the University; the Vice-Presidents in the Divisions of Education and Student Life; the Secretary of the University; the Dean of Undergraduate Studies; the Deans, Associate Deans, and Assistant Deans of Trinity College, the Woman's College and the College of Engineering; the University Librarian; the Director of the Summer Session; the Directors of Admissions; the Director of the Bureau of Testing and Guidance; and the Chairman and Director of Undergraduate Studies of each department in the above colleges. Any department which has more than five full-time teaching staff members shall elect one additional member to the Council; any department which has more than ten staff members shall elect a total of two additional members to the Council. The President in his discretion may appoint not more than five additional voting members.

The Vice-President in the Division of Education, or his deputy, serves as Chairman of the Council. The Council may provide for such standing or special committees, including an executive committee, as it deems necessary. Membership on committees of the Council is not restricted to Council members. The Council normally meets once each month during the academic year. Special meetings are called by the Chairman and on the written request of five members of the Council.

The functions of the Council, subject to the regulations of the University Faculty, are:

- (a) To consider the broad objectives of undergraduate education;
- (b) To encourage the achievement and maintenance of high standards of teaching and scholarship in the undergraduate colleges;
- (c) To legislate on questions of curriculum for the undergraduate colleges of arts and sciences;
- (d) To adopt regulations concerning matters affecting the academic life of students in the undergraduate colleges, and to integrate the details of educational and related interests of those colleges.

In the exercise of its functions, the Council receives information on such matters as student aid, admissions and student life.

The Graduate School Faculty is composed of the President of the University;

the Vice-President in the Division of Education; the Dean of the Graduate School; officers of the Graduate School; the Director of the Summer Session; the University Librarian; and all full-time faculty members of the rank of assistant professor and above who are approved to offer graduate work or to supervise the research work of graduate students registered in the Graduate School.

The Dean of the Graduate School, or his deputy, serves as Chairman of the Graduate School Faculty. A Secretary is appointed by the President.

There is an Executive Committee consisting of the Dean of the Graduate School and members elected by and from the Graduate School in accordance with regulations prescribed by the Graduate School Faculty. This Committee serves in an advisory and consultative capacity and discharges specific duties delegated to it by the Graduate School Faculty.

The Graduate School Faculty meets twice each semester. Additional meetings may be called by the Chairman or on the written request of five members. The Executive Committee normally meets once each month but not less than six times during each academic year.

The functions of the Graduate School Faculty, subject to the regulations of the University Faculty, are:

- (a) To establish the standards of graduate work and the requirements for degrees in the Graduate School of Arts and Sciences;
- (b) To study and enact the necessary regulations governing courses of graduate instruction and graduate research;
- (c) To determine policies to be followed in dealing with other educational matters arising in the Graduate School of Arts and Sciences.

The Engineering Faculty Council consists of the President of the University; the Vice-President in the Division of Education; the Dean of the College of Engineering; the Dean of Undergraduate Studies; the Secretary of the Council; the Chairman and one additional representative from each department of Engineering; and three members from the University Faculty representing departments in which engineering students are required to take work. The Secretary and the three Faculty members from outside the College of Engineering are appointed annually by the President.

The Dean of the College of Engineering serves as Chairman of the Council. The Council normally meets once each month; additional meetings are called by the Chairman or on the written request of five Council members.

The Council considers and, subject to regulations of the University Faculty, legislates on questions of curricula and adopts regulations concerning those educational, professional, and administrative matters pertaining exclusively to the College of Engineering.

Each of the professional Schools of the University has its own faculty.

The President of the University, the Vice-President in the Division of Education, and all members of the University Faculty in each professional school are members of the faculty of that school.

The Dean of each professional school, or his deputy, serves as chairman of the Faculty of that school. Each faculty arranges details of its organization to fit its particular needs, observing the general principles of representation, freedom of discussion and democratic procedures.

The functions of each professional school faculty, subject to the regulations of the University Faculty, are to legislate on its curriculum and programs of work and to adopt regulations on the educational and administrative activities of that school.

6. ACADEMIC YEAR. The academic year begins on the morning of the Wednesday following September 15. The annual Commencement comes in the week including the first Sunday in June. The Christmas recess begins at 1:00 P.M. December 20 (or December 19 if December 20 falls on Sunday), and ends at 8:00 A.M., January 3 (or January 4 if January 3 falls on Sunday). The spring recess begins at 1:00 P.M. of the Saturday in March nearest to March 25, and ends at 8:00 A.M., of Monday nine days later. Thanksgiving Day is a holiday.

7. **TENURE OF OFFICE.** Teachers of all ranks are subject to removal by the Executive Committee, with the approval of the University Trustees, for misconduct or neglect of duty. Teachers may be elected for terms of one, two, three, or four years; or teachers with the rank of professor may be elected without time-limit. Administrative officers are usually elected without time-limit, but the Executive Committee, with the approval of the University Trustees, may remove any officer of the University, whenever, in their opinion, he is not properly performing the duties of his office.

8. The bylaws may be amended at any regular meeting of the University Trustees by the affirmative vote of two thirds of the then membership of the Board, providing that the proposed amendment is submitted through the Secretary of the Board to the members at least twenty days before the meeting.

SABBATICAL LEAVE

Sabbatical leave of absence for members of the University Faculty is granted under regulations adopted by the Executive Committee of the Trustees on March 28, 1923, revised in 1928, partly in abeyance in the year 1933-34 and the succeeding three years, and restored in the year 1937-38. The conditions on which sabbatical leave of absence is granted are set forth below.

1. Every member of the University Faculty (of the rank of professor, associate professor, and assistant professor) is eligible for sabbatical leave after six years in the service of the University. Such leave may be taken for a full year at half salary or a half year at full salary.

2. In order to obtain a sabbatical leave written request for such leave must be filed with the President of the University by December 1 of the academic year preceding the one in which the leave is to take effect.

3. If in exceptional cases it should develop that the granting of leave to an applicant during the year for which application is made would raise very serious difficulties detrimental to the best interests of the applicant's department or school, or the interests of the institution as a whole; or because of questions concerning the applicant's period of service prior to the leave, the President shall appoint a committee which shall have power to decide the question of granting the sabbatical leave for the particular year under consideration. This committee shall consist of five members as follows: two members of the general faculty appointed yearly by the President, the Treasurer of the University, the Dean of the school or college of which the applicant is a member, the chairman of the applicant's department, or should no such chairman exist another member of the applicant's department.

4. If this committee should decide against the granting of a sabbatical leave for the year for which the applicant applied, the applicant would be eligible for sabbatical leave the following year or any year thereafter upon making application in due form as above.

5. After September 1, 1928, if a member of the faculty on becoming eligible for sabbatical leave does not for some special reason apply for such leave, he may count the additional years of service prior to his leave towards the six years of service necessary before he can apply for a subsequent leave. If in an exceptional case an applicant for personal reasons applies for a sabbatical leave to be effective in advance of his regular year and such leave is granted, he shall not be eligible for a subsequent leave until he has served six years plus the number of years by which this leave is advanced.

6. On recommendation of the committee after leave of absence has been granted it may be postponed for urgent reasons and under conditions to be determined by the committee.

7. All of those cases which have occurred in the past or which may occur in the future in which leave of absence is granted under conditions where the absentee receives full pay for a half year or half pay or more for a full year's leave of absence, shall be considered as regular sabbatical leave under these regulations.

8. These revised regulations became effective as of September 1, 1928, and sabbatical leaves under such regulations began with the academic year 1929-30.

The regulations were partly in abeyance in 1933-34, 1934-35, 1935-36, and 1936-37. The restoration of the regulations began with the academic year 1937-38. The four years, 1933-34, 1934-35, 1935-36, and 1936-37, may not count toward the six years of service necessary before application can be made for leave of absence. In all cases in which special arrangements have been made for the granting of sabbatical leave (as described in condition No. 7) during the period of partial abeyance of the plan, the next six years of service shall be counted as beginning with the academic year 1937-38. All other members of the General Faculty who apply for sabbatical leave may count the years of service they had to their credit at the beginning of the academic year 1933-34.

RETIREMENT

The following resolution was passed by the Board of Trustees on June 5, 1948:

RESOLVED, That the following regulations shall from the date of the adoption of this resolution govern the retirement of all officers and employees of Duke University:

I. Retirement.

Except as provided in Section II of this resolution all officers and employees of Duke University, except the Chancellor and Vice-Chancellor, shall retire at the end of the academic year in which they attain the age of sixty-nine (69), herein called the normal retirement age.

II. Extension of Service.

By special vote of the Board of Trustees individual extensions of service beyond the normal retirement age may be made for a definite period not to exceed one year, but no such extension shall postpone retirement beyond the end of the academic year in which the age of seventy (70) is attained.

III. Amendment of Retirement Annuity Plan Adopted October 1, 1925.

The retirement annuity plan adopted by Duke University on October 1, 1925, is hereby amended in those respects required to conform said plan with the provisions of this resolution.

IV. Amendment.

The University reserves the right at any time to amend these regulations by lowering the retirement age, or altering or abolishing the provision for extension of service, or otherwise.

Officers of the University for the Year 1956-57



The Corporation

The date in parenthesis indicates the year of election.

THE EXECUTIVE COMMITTEE

NORMAN ATWATER COCKE (1953), <i>ex officio</i> , <i>Chairman</i>	Charlotte, N. C.
GEORGE GARLAND ALLEN (1923)	New York, N. Y.
ARTHUR HOLLIS EDENS (1948), <i>ex officio</i>	Durham, N. C.
PHILLIP FRANK HANES (1954)	Walkertown, N. C.
AMOS RAGAN KEARNS (1948)	High Point, N. C.
ALEXANDER HAMILTON SANDS, JR. (1946)	New York, N. Y.
BUNYAN SNIPES WOMBLE (1950)	Winston-Salem, N. C.
CHRISTINE ALLEN KIMBALL (1945), <i>Recording Secretary</i>	Durham, N. C.

THE UNIVERSITY TRUSTEES

TRUSTEES WHOSE TERM EXPIRES DECEMBER 31, 1959

NORMAN ATWATER COCKE (1947), <i>Chairman</i>	Charlotte, N. C.
DONALD SILER ELIAS (1929)	Asheville, N. C.
JOSEPH LAWRENCE HORNE (1934)	Rocky Mount, N. C.
JEFFERSON DEEMS JOHNSON, JR. (1955)	Raleigh, N. C.
BENJAMIN EVERETT JORDAN (1943)	Saxapahaw, N. C.
REUBEN B. ROBERTSON, JR. (1957)	Washington, D. C.
JAMES BUREN SIDBURY (1947)	Wilmington, N. C.
KENNETH CRAWFORD TOWE (1954)	New York, N. Y.

FROM THE ALUMNI

SIDNEY SHERRILL ALDERMAN (1934)	Washington, D. C.
KENNETH MILLIKAN BRIM (1952)	Greensboro, N. C.
EDGAR HARRISON NEASE (1950)	Greensboro, N. C.
GEORGE ROBERT WALLACE (1954)	Morhead City, N. C.

TRUSTEES WHOSE TERM EXPIRES DECEMBER 31, 1961

GEORGE GARLAND ALLEN (1923)	New York, N. Y.
*ROBERT GREGG CHERRY (1934)	Gastonia, N. C.
JESSE PAUL FRIZZELLE (1937)	Snow Hill, N. C.
CALVIN BRYAN HOUCK (1951)	Roanoke, Va.
EDWIN LEE JONES (1945)	Charlotte, N. C.
JAMES RAYMOND SMITH (1934)	Mount Airy, N. C.
ESTELLE FLOWERS SPEARS (1951)	Durham, N. C.
RICHARD ELTON THIGPEN (1953)	Charlotte, N. C.

* Died June 25, 1957.

FROM THE ALUMNI

BENJAMIN FERGUSON FEW (1941)	New York, N. Y.
JULIUS WELCH HARRISS (1947)	High Point, N. C.
WILLIAM JULIUS HOBBS (1947)	Rochester, N. Y.
HUBBARD BRAXTON PORTER (1941)	Durham, N. C.

TRUSTEES WHOSE TERM EXPIRES DECEMBER 31, 1963

CHARLES ALBERT CANNON (1949)	Concord, N. C.
PHILLIP FRANK HANES (1948), <i>Vice-Chairman</i>	Walkertown, N. C.
PLEASANT HUBER HANES, JR. (1954)	Winston-Salem, N. C.
WILLIAM WALTER PEELE (1921)	Laurinburg, N. C.
FRANK GRAINGER PIERCE (1954)	Charlotte, N. C.
ALEXANDER HAMILTON SANDS, JR. (1946)	New York, N. Y.
WRIGHT TISDALE (1957)	Dearborn, Mich.
BUNYAN SNIPES WOMBLE (1915)	Winston-Salem, N. C.

FROM THE ALUMNI

CHARLES PHILLIPS BOWLES (1954)	Greensboro, N. C.
NORMAN EDWARD EDGERTON (1941)	Raleigh, N. C.
AMOS RAGAN KEARNS (1945)	High Point, N. C.
ROBERT ANDREW MAYER (1897)	Charlotte, N. C.

TRUSTEES EMERITI

JAMES ARDREY BELL (1920)	Charlotte, N. C.
HENRY CLAY DOSS (1943)	Detroit, Mich.
PLEASANT HUBER HANES (1912)	Winston-Salem, N. C.
EARLE WAYNE WEBB (1933)	New York, N. Y.

COMMITTEES OF THE UNIVERSITY TRUSTEES

Buildings and Grounds: Messrs. Smith, Cherry, Jordan, and Kearns.
Business Administration: Messrs. Elias, Hobbs, Kearns, and Sands.
Colleges: Messrs. Mayer, P. F. Hanes, and Houck, and Mrs. Spears.
Divinity School: Messrs. Peele, Bowles, Edgerton, Nease, and Porter.
School of Forestry: Messrs. Cherry, Edgerton, Few, and Smith.
Graduate School: Messrs. Cannon, Thigpen, Tisdale, Robertson.
Law School: Messrs. Womble, Alderman, Cherry, Cocke, Frizelle, Pierce, and Johnson.
Library: Messrs. Allen, Harriss, and Nease.
Medical School and Hospital: Messrs. Elias, Horne, Sidbury, and Towe.
Physical Education and Athletics: Messrs. Smith, Edgerton, P. F. Hanes, Harriss, and Jordan.
Engineering and Research: Messrs. Cocke, Jones, Jordan, and Sands.
Cooperation and National Council: Messrs. Sands, Few, Hobbs, Kearns, and Nease.
Public Relations and Publicity: Messrs. Horne, Elias, P. H. Hanes, Jr., Harriss, and Wallace.

Emeriti

ALICE MARY BALDWIN, Ph.D., LL.D. <i>Professor Emeritus of History</i>	406 Swift Avenue
PAUL FRANKLIN BAUM, Ph.D. <i>James B. Duke Professor Emeritus of English</i>	112 Pinecrest Road
HAROLD CRUSIUS BIRD, Ph.B., C.E. <i>Professor Emeritus of Civil Engineering</i>	1209 Virginia Avenue
HUGO LEANDER BLOMQUIST, Ph.D. <i>Professor Emeritus of Botany</i>	922 Demerius Street

- BENJAMIN GUY CHILDS, M.A.
Professor Emeritus of Education 1019 West Markham Avenue
- FREDERICK AUGUSTUS GRANT COWPER, Ph.D.
Professor Emeritus of Romance Languages 1017 Dacian Avenue
- MASON CRUM, Ph.D., Litt.D.
Professor Emeritus of Biblical Literature 912 Anderson Street
- HOWARD EASLEY, Ph.D.
Associate Professor Emeritus of Education Guess Road
- FRANK NICHOLAS EGERTON, A.M., E.E.
*Associate Professor Emeritus of
Electrical Engineering* Brevard College
Brevard, N. C.
- WILLIAM STONE FITZGERALD, A.M.
Instructor Emeritus of English 603 Watts Street
- ALLAN H. GILBERT, Ph.D.
Professor Emeritus of English 503 Compton Place
- WILLIAM HOLLAND HALL, A.M., M.S.C.E.
J. A. Jones Professor Emeritus of Engineering 3 Johnson Apartments
304 Watts Street
- GEORGE T. HARGITT, Ph.D., Sc.D.
Professor Emeritus of Zoology 811 Watts Street
- HORNELL NORRIS HART, Ph.D.
Professor Emeritus of Sociology 2535 Perkins Road
- CHARLES CLEVELAND HATLEY, Ph.D.
Professor Emeritus of Physics Mt. Pleasant, N. C.
- FRANKLIN SIMPSON HICKMAN, Ph.D., D.D.
Professor Emeritus of the Psychology of Religion 809 West Maumee Street
Angola, Indiana
- HUGO CLAUDE HORACK, LL.B., LL.D.
Professor Emeritus of Law 2600 Tanglewood Lane
Charlotte, N. C.
- JAY BROADUS HUBBELL, Ph.D., Litt.D.
Professor Emeritus of English 121 Pinecrest Road
- WILLIAM HENRY IRVING, B.A. (Oxon.), Ph.D.
Professor Emeritus of English 2707 Legion Avenue
- CHARLES ALBERT KRUMMEL, Ph.D.
Professor Emeritus of German 2118 Englewood Avenue
- WILLIAM THOMAS LAPRADE, Ph.D.
Professor Emeritus of History 1108 Monmouth Avenue
- MALCOLM McDERMOTT, LL.B.
Professor Emeritus of Law Box 451, Donna, Texas
- FRANK KIRBY MITCHELL, A.M.
Associate Professor Emeritus of English 619 Swift Avenue
- KARL BACHMAN PATTERSON, A.M.
Assistant Professor Emeritus of Mathematics 1024 Monmouth Avenue
- ROBERT LEET PATTERSON, B.D., Ph.D.
Professor Emeritus of Philosophy Washington Duke Hotel
- *ARTHUR SPERRY PEARSE, Ph.D., LL.D.
Professor Emeritus of Zoology 803 Second Street
- WILLIAM WALTER RANKIN, M.A.
Professor Emeritus of Mathematics Jefferson Hotel
Richmond, Va.
- GILBERT THEODORE ROWE, S.T.D., D.D., Litt.D.
Professor Emeritus of Christian Doctrine 150 Pinecrest Road

* Died, December 11, 1956.

- MRS. BESSIE WHITTED SPENCE, A.M., B.D. 3629 Hope Valley Road, Hope Valley
Assistant Professor Emeritus of Biblical Literature
- HERSEY EVERETT SPENCE, B.D., D.D., Litt.D.
Professor Emeritus of Religious Education 3629 Hope Valley Road, Hope Valley
- HERBERT WILFRID SUGDEN, Ph.D.
Assistant Professor Emeritus of English Pinehurst, N. C.
- MRS. MARY HENDREN VANCE, A.M.
Assistant Professor Emeritus of English 814 Cowper Drive, Raleigh, N. C.
- CLEMENT VOLLMER, Ph.D. 1615 Waterbury Road
Professor Emeritus of German Lakewood 7, Ohio
- HERBERT VON BECKERATH, Ph.D. Hotel Eden, Bad Godesberg a. Rhine
Professor Emeritus of Political Science and Economics Germany
- ALBERT MICAIAH WEBB, A.M.
Professor Emeritus of Romance Languages 1017 Trinity Avenue
- MRS. MARIE ANNE UPDIKE WHITE, A.M.
Associate Professor Emeritus of English 107 Pinecrest Road
- ALBAN GREGORY WIDGERY, M.A. Val Vista, Middle Road
Professor Emeritus of Philosophy Winchester, Va.
- RALPH SYDNEY WILBUR, B.S. in M.E., M.E.
Professor Emeritus of Mechanical Engineering 1018 Demerius Street
- FLORENCE K. WILSON, R.N., M.A.
Professor Emeritus of Nursing Education Route 1, Tryon, N. C.
- ROBERT NORTH WILSON, M.S.
Professor Emeritus of Chemistry 822 Third Street
- FREDERICK ADOLPHUS WOLF, Ph.D.
James B. Duke Professor Emeritus of Botany 924 Urban Avenue
- EDWARD HUDSON YOUNG, A.M.
Assistant Professor Emeritus of Romance Languages 111 Watts Street

General Administration

- ARTHUR HOLLIS EDENS, Ph.D., LL.D.
President of the University 2138 Myrtle Drive
- WILLIAM HANE WANNAMAKER, A.M., Litt.D.
Vice-Chancellor of the University 615 West Campus
- PAUL MAGNUS GROSS, Ph.D.
Vice-President in the Division of Education 3816 Dover Road, Hope Valley
- CHARLES EDWARD JORDAN, A.B., LL.D.
Vice-President in the Division of Public Relations 813 Vickers Avenue
- HERBERT JAMES HERRING, M.A., LL.D.
Vice-President in the Division of Student Life 2010 Myrtle Drive
- ALFRED SMITH BROWER, A.B.
Business Manager and Treasurer 614 West Campus
- GERHARD CHESTER HENDRICKSEN, M.A., C.P.A.
Comptroller and Assistant Treasurer 216 Forest Wood Drive

Instructional Staff

- FRANCES DOROTHY ACOMB (1945), Ph.D.
Assistant Professor of History C-1B University Apartments

- DONALD KEITH ADAMS (1931), Ph.D.
Professor of Psychology 2508 Cornwallis Road
- JOHN RICHARD ALDEN (1955), Ph.D.
Professor of History 2736 Dogwood Road
- EDWIN PASCAL ALYEA (1930), M.D.
Professor of Urology 3102 Devon Road, Hope Valley
- CARL L. ANDERSON (1955), Ph.D.
Instructor in English 2400 Chapel Hill Road
- LEWIS EDWARD ANDERSON (1936), Ph.D.
Professor of Botany 2020 Sunset Avenue
- ROGER FABIAN ANDERSON (1950), Ph.D.
Associate Professor of Forest Entomology 2528 Perkins Road
- WILLIAM BANKS ANDERSON (1930), M.D.
Professor of Ophthalmology 502 East Forest Hills Boulevard
- WILLIAM G. ANLYAN (1951), M.D.
Assistant Professor of Surgery 1507 Woodburn Road
- *WILLIAM COUNCIL ARCHIE (1946), Ph.D.
Associate Professor of Romance Languages
- JAY MORRIS ARENA (1933), M.D.
Associate Professor of Pediatrics 2032 Club Boulevard
- KIRO PETE ARGES (1953), M.S. in C.E.
Assistant Professor of Civil Engineering 915 Lambeth Circle, Poplar Apartments
- RALPH ARANOVITZ ARNOLD (1946), M.D.
*Professor of Otology and Associate Professor of
Otolaryngology and Ophthalmology* 911 Urban Avenue
- JOHN LESLIE ARTLEY (1955), D.Eng.
Assistant Professor of Electrical Engineering 1805 Forest Road
- THEODORE WINSLOW ATWOOD (1934), D.M.D.
Associate in Dentistry 9 Carolee Apartments, 2200 Elder Street
- PIERRE AUBERY (1955), Docteur de l'université
Instructor in Romance Languages 1400 Duke University Road
- THOMAS MALCOLM AYCOCK (1937), M.A.
Professor of Physical Education D1C University Apartments
- JOSEPH RANDLE BAILEY (1946), Ph.D.
Associate Professor of Zoology 2117 Sprunt Street
- LENOX DIAL BAKER (1947), M.D.
Professor of Orthopaedic Surgery 3106 Cornwall Road, Hope Valley
- ROGER D. BAKER (1930-1942; 1952), M.D.
Professor of Pathology 303 Swift Avenue
- MARIE BALDWIN (1949), M.D.
Associate in Psychiatry Highland Hospital, Asheville, N. C.
- KATHARINE MAY BANHAM (1946), Ph.D.
Associate Professor of Psychology College Station
- †ROBERT HENRY BARNES (1953), M.D.
Assistant Professor of Psychiatry
- ‡JAMES W. BARNHILL (1954), M.A., Major, U. S. Air Force
Assistant Professor of Air Science 2005 Arbor Street

* Resigned, August 31, 1956.

† Resigned, November 15, 1956.

‡ Resigned, May 31, 1957.

- DAVID C. BARRY (1956), B.S., Lieutenant Commander, U. S. Navy
Assistant Professor of Naval Science Route 1, Box 107, Pope Road
- WILLIAM BARRY (1955), M.D.
*Associate Professor of Radiology and
 Chief of Radiology of Durham Veterans
 Administration Hospital* 1022 Gloria Avenue
- ROBERT V. R. BASSETT, JR. (1956), B.S., Captain, U. S. Navy
Professor of Naval Science 2101 Myrtle Drive
- LORENE BATES (1956), R.N., B.S.
Instructor in Nursing Hanes House
- GEORGE JAY BAYLIN (1939), M.D.
Professor of Radiology and Associate in Anatomy 2260 Cranford Road
- CHARLES A. BAYLIS (1952), Ph.D.
Professor of Philosophy 601 East Markham Avenue
- WILLIAM WALDO BEACH (1946), B.D., Ph.D.
Professor of Christian Ethics 100 Vineyard Street
- MRS. DOROTHY WATERS BEARD (1938), R.N.
Associate in Surgery Route 3, Hillsboro, N. C.
- JOSEPH WILLIS BEARD (1937), M.D.
*Professor of Surgery in Charge of Experimental
 Surgery; Associate Professor of Virology* Route 3, Hillsboro, N. C.
- ROLAND FREDERICK BECKER (1951), Ph.D.
Associate Professor of Anatomy 1010 Monmouth Avenue
- GORDON EDWARD BELL (1954), M.B.A., C.P.A.
Assistant Professor of Economics 2502 Glendale Avenue
- FREDERICK BERNHEIM (1930), Ph.D.
Professor of Pharmacology Woodridge Drive
- MRS. MARY LILIAS CHRISTIAN BERNHEIM (1930), Ph.D.
Associate Professor of Biochemistry Woodridge Drive
- *MRS. LYDIA BERNSTEIN (1953), B.M., M.S.
Visiting Instructor in Music
- EDWARD WILLARD BERRY (1936), Ph.D.
Professor of Geology 1003 North Gregson Street
- MRS. HELEN SMITH BEVINGTON (1943), M.A.
Assistant Professor of English Box 128, Route 2, Guess Road
- MERLE MOWBRAY BEVINGTON (1942), Ph.D.
Professor of English Box 128, Route 2, Guess Road
- LUCIUS AURELIUS BIGELOW (1929), Ph.D.
Professor of Chemistry 131 Pinecrest Road
- WILLIAM DWIGHT BILLINGS (1952), Ph.D.
Associate Professor of Botany 708 Louise Circle, Poplar Apartments
- †MARTIN LEE BLACK, JR. (1930), M.B.A., C.P.A.
Professor of Accounting 135 Pinecrest Road
- WILLIAM MAXWELL BLACKBURN (1926), Ph.D.
Professor of English 402 Buchanan Boulevard
- ROBERT LINCOLN BLAKE (1949)
Associate in Medical Art and Illustration 609 Ruby Street
- JOHN B. BLANCHARD (1956), A.M.
Instructor in Romance Languages 2626 Pickett Road

* Resigned, June 30, 1956.

† Absent on sabbatical leave, fall semester, 1956-57.

- MARTIN M. BLOCK (1952), Ph.D.
Assistant Professor of Physics and Research Associate 2255 Cranford Road
- BYRON M. BLOOR (1952), M.D.
Associate in Neurosurgery 2216 Elba Street
- JAMES ROBERT BLY (1949), M.S.
Assistant Professor of Physical Education 2001 Ruffin Street
- *MORTON BOGDONOFF (1954), M.D.
Associate in Medicine
- †WILLIAM BRYAN BOLICH (1927), M.A., B.C.L.
Professor of Law 3724 Hope Valley Road, Hope Valley
- EDWARD CLAUDE BOLMEIER (1948), Ph.D.
Professor of Education 217 Faculty Apartments
- †ALLAN HADLEY BONE (1944), M.M.
Associate Professor of Music 2314 West Club Boulevard
- CAZLYN GREEN BOOKHOUT (1935), Ph.D.
Professor of Zoology 1307 Alabama Avenue
- MRS. ELIZABETH CIRCLE BOOKHOUT (1932-43; 1945), M.S.
Associate Professor of Physical Education 1307 Alabama Avenue
- ‡ALEXANDER W. BOONE (1952), M.D.
Assistant Professor of Urology 2027 Woodrow Street
- LLOYD J. BORSTELMANN (1953), Ph.D.
Assistant Professor of Psychology 305 Francis Street
- MICHEL BOURGEOIS-GAVARDIN (1953), M.D.
Assistant Professor of Anesthesiology Box 3445, Duke Hospital
- §ELBERT VICTOR BOWDEN (1952-54; 1955), M.A.
Instructor in Economics
- ALVA M. BOWEN, JR. (1955), B.S., Lieutenant, U. S. Navy
Assistant Professor of Naval Science 1403 Norton Street
- FRANCIS EZRA BOWMAN (1945), Ph.D.
Associate Professor of English 2114 Woodrow Street
- BENJAMIN BOYCE (1950), Ph.D.
Professor of English 1200 Dwire Place
- DAVID GILBERT BRADLEY (1950), Ph.D.
Assistant Professor of Undergraduate Religion 707 Hudson Street
- HAROLD L. BRADLEY (1940), B.S.
Assistant Professor of Physical Education 1903 Washington Street
- CHARLES KILGO BRADSHAW (1939), Ph.D.
Professor of Chemistry 118 Pinecrest Road
- JOHN SAEGER BRADWAY (1931), A.M., LL.B.
Professor of Law and Director of the Legal Aid Clinic 2621 Stuart Drive
- LOUIS RICHARD BRAGG (1955), Ph.D.
Instructor in Mathematics 1003 East Trinity Avenue
- RALPH J. D. BRAIBANTI (1953), Ph.D.
Associate Professor of Political Science 2614 Stuart Drive
- BERNARD BRESSLER (1954), M.D.
Associate Professor of Psychiatry 2700 Circle Drive

* Resigned, June 30, 1956.

† Absent on sabbatical leave, spring semester, 1956-57.

‡ Resigned, January 31, 1957.

§ Resigned, August 31, 1956.

- ROBERT N. BRIGHAM (1956), B.E.E.
Lecturer in Electrical Engineering 2312 University Drive
- ROBERTA FLORENCE BRINKLEY (1947), Ph.D., LL.D.
Professor of English East Campus
- MRS. EDITH BROCKER (1955), B.S., M.Ed.
Assistant Professor of Nursing 16 Rogerson Drive, Chapel Hill, N. C.
- ROBERT MAURICE BRODERSON (1952), M.F.A.
*Instructor in Art Education and Studio and
Instructor in the Department of Education* Cornwallis Road
- FRANCES CAMPBELL BROWN (1931), Ph.D.
Professor of Chemistry 1205 Dwire Place
- IVAN WILLARD BROWN, JR. (1940-42; 1945), M.D.
Associate Professor of Surgery 1709 Vista Street
- *WADE GILLIES BROWN (1947), A.B.
Lecturer in Sanitary Engineering
- WILLIAM HUGH BROWNLEE (1948), Th.M., Ph.D.
Associate Professor of Old Testament 2809 Fairview Road
- PAUL ROBEY BRYAN, JR. (1951), M.M., Ph.D.
Assistant Professor of Music 1 Duke University Apartments
- †RALPH C. BRYANT (1956), Ph.D.
Visiting Lecturer in Forestry Avents Ferry Road, Route 4
Raleigh, N. C.
- EDWIN CONSTANT BRYSON (1931), LL.B.
Professor of Law 818 Anderson Street
- †ROGER CONANT BUCK (1953), B.A., B. Phil. (Oxon.) Department of Philosophy
Assistant Professor of Philosophy Ohio State University, Columbus, Ohio
- MICHAEL J. BUCKINGHAM (1956), Ph.D.
Visiting Assistant Professor of Physics Route 2, Durham, N. C.
- LOUIS J. BUDD (1952), Ph.D.
Assistant Professor of English 1011½ Dacian Avenue
- ALBERT GEORGE BUEHLER (1955), B.A.
Instructor in Physical Education 3401 Cranford Road
- MRS. JE HARNED BUFKIN (1949), R.N., R.R.L.
Assistant Professor of Medical Record Library Science 2425 Perkins Road
- EVERETT I. BUGG, JR. (1953), M.D.
Associate in Orthopaedics 1544 Hermitage Court
- §FLORENT J. BUREAU (1955), Agrégé de l'Enseignement Supérieur
Research Associate in Mathematics
- EWALD W. BUSSE (1953), M.D.
Professor of Psychiatry 1423 Woodburn Road
- ||GALE H. BUZZARD (1956), B.S. in M.E.
Instructor in Mechanical Engineering Department of Mechanical Engineering
- WILLIAM LAWRENCE BYRNE (1954), Ph.D.
Assistant Professor of Biochemistry Duke Hospital
- MRS. MARGUERITE WEISINGER BYRNES (1956), M.A.
Temporary Instructor in Mathematics 1511 Woodland Drive
- JASPER LAMAR CALLAWAY (1937), M.D.
Professor of Dermatology and Syphilology 828 Anderson Street

* Resigned, May 31, 1956.

† Fall semester, 1956-57.

‡ Absent on leave, 1956-57.

§ Resigned, August 15, 1956.

|| Spring semester, 1956-57.

- DONALD AMOS CALLESON (1955), B.S. in M.E.
Instructor in Mechanical Engineering 803 Third Street
- EDMUND McCULLOUGH CAMERON (1926), A.B.
Director of Physical Education and Athletics 2818 Chelsea Circle, Hope Valley
- EMILY BENTLEY CAMPBELL (1955), B.S.
Instructor in Nursing Arts 1707 James Street
- SULLIVAN G. CAMPBELL (1955), A.B., M.S., Ph.D.
Visiting Associate Professor of Mathematics 812 Third Street
- ROY M. CANFIELD, JR. (1955), B.F.A., Captain, U. S. Air Force
Instructor in Air Science 1914 Arbor Street
- JAMES CANNON (1919), A.M., Th.M., D.D., LL.D.
Ivey Professor of the History of Religion and Missions 2022 Myrtle Drive
- LEONARD CARLITZ (1932), Ph.D.
Professor of Mathematics 2303 Cranford Road
- JOHN WILLIAM CARLTON (1955), B.D., Ph.D.
Assistant Professor of Preaching 302 Northwood Circle
- DAVID WILLIAMS CARPENTER (1929), Ph.D.
Professor of Physics 137 Pinecrest Road
- JOHN WINDER CARR, JR. (1926), Ph.D.
Professor of Education 926 Monmouth Avenue
- EBER MALCOLM CARROLL (1923), Ph.D.
James B. Duke Professor of History K1C University Apartments
- R. CHARMAN CARROLL (1944), R.N., A.B., M.D.
Associate Professor of Psychiatry Highland Hospital, Asheville, N. C.
- BAYARD CARTER (1931), M.D.
Professor of Obstetrics and Gynecology 2111 Myrtle Drive
- ALLAN MURRAY CARTTER (1952), Ph.D.
Associate Professor of Economics and Research Associate 1208 Dwire Place
- WILLIAM H. CARTWRIGHT (1951), Ph.D.
Professor of Education 2114 Myrtle Drive
- HECTOR NERI CASTANEDA (1956), Ph.D.
Visiting Assistant Professor of Philosophy Apartment 2
Fifth and Markham Avenue
- MRS. HELEN KENNARD CASTELLANO (1947), M.A.
Instructor in Romance Languages 2511 Perkins Road
- JUAN RODRÍGUEZ CASTELLANO (1947), Doctor en Filosofía y Letras
Professor of Romance Languages 2511 Perkins Road
- LEON EDWARD CHAIKEN (1952), B.S., M.F.
Associate Professor of Forest Management and Assistant Director of the Forest 2737 Dogwood Road
- ANAND MOHAN CHAK (1956), Ph.D.
Research Instructor in Mathematics 410 Anderson Street
- MRS. ROMA SAWYER CHEEK (1947), Ph.D.
Assistant Professor of Political Science 210 Cottage Lane, Chapel Hill, N. C.
- AMOZ IMMANUEL CHERNOFF (1956), M.D.
Associate Professor of Medicine 86 Hayes Road, Chapel Hill, N. C.
- ELON HENRY CLARK (1934)
Professor of Medical Art and Illustration 1300 Oakland Avenue
- KENNETH WILLIS CLARK (1931), Ph.D.
Professor of New Testament 1308 West Markham Avenue

- LELIA ROSS CLARK (1949), R.N., M.A.
Professor of Nursing Service Apartment 6M, Poplar Apartments
- ROMANE LEWIS CLARK (1953), Ph.D.
Assistant Professor of Philosophy Apartment 10
Fifth and Markham Avenue
- JAMES T. CLELAND (1945), M.A., Th.D., D.D.
James B. Duke Professor of Preaching 2117 Myrtle Drive
- *PAUL HIBBERT CLYDE (1937), Ph.D.
Professor of History 1311 Carolina Avenue
- PAUL WHITLOCK COBB (1955), B.S.
Instructor in Physical Education 412 Swift Avenue
- LOUIS DAVID COHEN (1946), Ph.D.
*Associate Professor of Psychology and Associate
Professor of Medical Psychology* 1505 Acadia Street
- ROBERT TAYLOR COLE (1935), Ph.D.
James B. Duke Professor of Political Science 7 Sylvan Road
- JOEL G. COLTON (1947), Ph.D.
Assistant Professor of History 2801 Dogwood Road
- ROBERT MERLE COLVER (1953), Ed.D.
Assistant Professor of Education 2720 Circle Drive
- NORMAN FRANCIS CONANT (1935), Ph.D.
*Professor of Mycology and Associate
Professor of Bacteriology* Route 1, Old Cornwallis Road
- ROBERT HOWE CONNERY (1949), Ph.D.
Professor of Political Science 1722 Duke University Road
- EVELYN VAIL COONRAD (1952-53; 1955), M.D.
Associate in Medicine Duke Hospital
- THOMAS HOWARD CORDLE (1950), Ph.D.
Assistant Professor of Romance Languages 2420 Perkins Road
- JOHN B. COUGHLIN (1956), M.D.
Associate in Anesthesiology 2119 West Club Boulevard
- MARTHA LEE COVINGTON (1954), B.S.N.
Instructor in Nursing Arts Apartment S2, 810 Demerius Street
- ROBERT CALVIN COX (1942), M.A.
Assistant Professor of Physical Education 1826 Guess Road
- ROBERT LAWRENCE CRAIG (1938), M.D.
Associate in Psychiatry Highland Hospital, Asheville, N. C.
- ROBERT NOWELL CREADICK (1946), M.D.
Associate Professor of Obstetrics and Gynecology 1200 Anderson Street
- WILLIAM L. CULBERSON (1955), Ph.D.
Instructor in Botany Route 2, Farrington Road
Chapel Hill, N. C.
- †EDMUND G. CUMMINGS (1955), Ph.D.
Instructor in Zoology
- JOHN SHELTON CURTISS (1945), Ph.D.
Professor of History Route 2, Box 129, Guess Road
- ROBERT EARL CUSHMAN (1945), B.D., Ph.D.
Professor of Systematic Theology 130 Pinecrest Road
- BINGHAM DAI (1943), Ph.D.
*Professor of Psychology, and Professor of
Medical Psychology* 2404 Perkins Road

* Absent on sabbatical leave, spring semester, 1956-57.

† Resigned, August 31, 1956.

- BOYD LEE DANIELS (1952), B.D., Ph.D.
Instructor in Undergraduate Religion 1840 Forest Road
- GIFFORD DAVIS (1930), Ph.D.
Professor of Romance Languages 2248 Cranford Road
- MRS. ATALA THAYER SCUDDER DAVISON (1942), M.D.
Associate in Pediatrics Duke Hospital
- WILBURT CORNELL DAVISON (1927), M.D., D.Sc., LL.D.
James B. Duke Professor of Pediatrics Duke Hospital
- ALEXANDER DECONDE (1952), Ph.D.
Assistant Professor of History 1515 Woodburn Road
- JOHN ESSARY DEES (1939), M.D.
Professor of Urology 413 Carolina Circle
- MRS. SUSAN COONS DEES (1939), M.D.
Associate Professor of Pediatrics and Allergy 413 Carolina Circle
- WILLIAM DECATUR DEGRAVELLES, JR. (1956), M.D.
Visiting Assistant Professor of Rehabilitation Apartment E-23
Westover Park Apartments
- WILLIAM P. DEISS, JR. (1954), M.D.
*Associate Professor of Medicine, Assistant Professor of Biochemistry,
Director of Radioisotope Laboratory, Veterans Hospital* Veterans Hospital
- WILLIAM J. A. DEMARIA (1951), M.D.
Assistant Professor of Pediatrics 1501 Woodburn Road
- SARA JAMISON DENT (1955), M.D.
Associate in Anesthesiology Duke Hospital
- WILLIAM ERNEST DETURK (1949), M.D., Ph.D.
Associate Professor of Pharmacology 2513 Pickett Road
- †FRANK TRAVER DEVYVER (1935), Ph.D.
Professor of Economics 8 Sylvan Road
- *DONALD J. DEWEY (1950), M.A.
Assistant Professor of Economics Department of Economics
- MACDONALD DICK (1932), M.D.
*Assistant Professor of Physiology and Pharmacology
and Associate in Medicine* 3005 Norwich Way, Hope Valley
- ROBERT L. DICKENS (1949), M.S., C.P.A.
Assistant Professor of Accounting 7 Duke University Apartments
- †RUSSELL LESLIE DICKS (1949), B.D., D.D., D.Litt.
Professor of Pastoral Care 2308 Prince Street
- MARCUS L. DILLON (1956), M.D.
*Assistant Professor of Surgery and Assistant Chief of Surgery
of the Durham Veterans Administration Hospital* 203 Francis Street
- HAROLD T. DODGE (1955), M.D.
Assistant Professor of Medicine 1403 Norton Street
- ROBERT H. DOVENMUEHLE (1956), M.D.
Associate in Psychiatry 3527 Hamstead Court
- MRS. MARIE-THERESE LINIERE DOW (1934), L. ès L., M.A.
Instructor in Romance Languages 2252 Cranford Road
- NEAL DOW (1934), Ph.D.
Associate Professor of Romance Languages 2252 Cranford Road

*Absent on sabbatical leave, 1956-57.

† Absent on sabbatical leave, fall semester, 1956-57.

- ANTHONY CHARLES DRAGO (1953), B.S. in P.E.
Instructor in Physical Education 1305 Carroll Street
- FRANCIS GEORGE DRESSEL (1929), Ph.D.
Professor of Mathematics 309 Francis Street
- * EUGENE DROZDOWSKI (1955), M.A.
Instructor in History
- KENNETH LINDSAY DUKE (1940), Ph.D.
Associate Professor of Anatomy 701 West Club Boulevard
- MARION MAHAN DUNCAN (1956), Ph.D.
Visiting Assistant Professor of Physics 811 Louise Circle
Poplar Apartments
- ROBERT F. DURDEN (1952), Ph.D.
Assistant Professor of History 2812 Erwin Road, Poplar Apartments
- GEORGE SHARP EADIE (1930), Ph.D.
Professor of Physiology and Pharmacology 3433 Dover Road, Hope Valley
- WATT WEEMS EAGLE (1930), M.D.
Professor of Otolaryngology 804 Anderson Street
- MRS. ELEANOR BEAMER EASLEY (1934), M.D.
Associate in Obstetrics and Gynecology Guess Road
- RUTH BUCHANAN EDDY (1952), M.S.
Assistant Professor of Physical Education 213 Faculty Apartments
- WILLIAM WHITFIELD ELLIOTT (1925), Ph.D.
Professor of Mathematics Box 4721, Duke Station
- † LEON HUBBARD ELLIS (1947), Ph.D.
Lecturer in Political Science 2428 Perkins Road
- ERNEST ELSEVIER (1950), M.S. in M.E.
Assistant Professor of Mechanical Engineering Route 1, Hillsboro, N. C.
- FRANK LIBMAN ENGEL (1947), M.D.
*Professor of Medicine and
Assistant Professor of Physiology* 1302 Oakland Avenue
- PAUL J. ENGLISH (1956), A.B., Captain, U. S. Air Force
Instructor in Air Science Frazier and Denise Street
- E. HARVEY ESTES (1953), M.D.
Associate in Medicine 3542 Hainstead Court
- JOHN WENDELL EVERETT (1932), Ph.D.
Professor of Anatomy 2605 University Drive
- ROBINSON OSCAR EVERETT (1956), LL.B.
Visiting Assistant Professor of Law 119 North Dillard Street
- LEONARD WILLIAM FABIAN (1954), M.D.
Assistant Professor of Anesthesiology 1818 Guess Road
- WILLIAM MARTIN FAIRBANK (1952), Ph.D.
Associate Professor of Physics 2016 Pershing Street
- CARMEN M. FALCONE (1946), M.A.
Assistant Professor of Physical Education D-1A University Apartments
- JUDITH FARRAR (1952), A.B., B.S.
Associate Professor of Medical Literature Library, Medical School
- ANNA LEE FAUVER (1955), B.S.
Instructor in Operating Room Nursing 1011 Dacian Avenue
- JOHN MORTON FEIN (1950), Ph.D.
Associate Professor of Romance Languages 2742 Circle Drive

* Resigned, August 31, 1956.

† Absent on sabbatical leave, spring semester, 1956-57.

- ARTHUR BOWLES FERGUSON (1939), Ph.D.
Associate Professor of History Route 2, Guess Road
- GEORGE BURTON FERGUSON (1937), M.D. 3938 Dover Road, Hope Valley
Assistant Professor of Endoscopy and Laryngology
- BERNARD F. FETTER (1951), M.D.
Assistant Professor of Pathology 2411 Pickett Road
- *EDGAR BEAUREGARDE FISHER (1953), B.D.
Lecturer in Church Administration
- JOHN H. FISHER (1955), Ph.D.
Associate Professor of English 2836 Stuart Drive
- WESTON FLINT (1956), A.M.
Instructor in Romance Languages 1121 Anderson Street
- †WILEY DAVIS FORBUS (1930), M.D.
Professor of Pathology 3309 Devon Road, Hope Valley
- ‡JOEL CLARENCE FORD, JR. (1953), B.S., Captain, U. S. Navy
Professor of Naval Science
- ROSE JULIET FORGIONE (1956), R.N., B.S., M.A.
Instructor in Pediatric Nursing 1412 North Duke Street
- ANDREW DURWOOD FOSTER (1954), B.D.
Assistant Professor of the History and Philosophy of Religion Apartment 18, Alastair Court
- JOHN ALVIS FOWLER (1953), M.D.
Assistant Professor of Psychiatry 1409 Woodburn Road
- CHARLES F. FRENZEL (1955), A.B.
Associate Professor of Hospital Administration and Assistant Superintendent of Duke Hospital 1008 Knox Street
- NOBORU FUKUNAGA (1955), M.D.
Visiting Assistant Professor of Pathology Duke Hospital
- §CHARLES DARBY FULTON, JR. (1950), Sc.D.
Assistant Professor of Mechanical Engineering 1507 West Pettigrew Street
- WILLIAM J. FURBISH (1954), B.S., M.A.
Instructor in Geology Route 1, Hillsboro, N. C.
- THOMAS MUIR GALLIE, JR. (1954-55; 1956), Ph.D.
Assistant Professor of Mathematics 1820 Forest Road
- CLARENCE ELLSWORTH GARDNER, JR. (1939), M.D., D.Sc.
Professor of Surgery Route 1, Hillsboro, N. C.
- WILLIAM HENRY GARDNER, JR. (1953), B.S. in C.E., M. Eng.
Assistant Professor of Civil Engineering 2108 Cole Road
- ¶NORMAN GARMEZY (1950), Ph.D.
Associate Professor of Psychology 10212 Tyburn Terrace, Bethesda, Md.
- W. SCOTT GEHMAN, JR. (1954), Ph.D.
Assistant Professor of Education 1312 Shephard Street
- NICHOLAS G. GEORGAIDE (1951), D.D.S., M.D.
Assistant Professor of Plastic Surgery 2417 Bruton Road
- JOHN JAY GERGEN (1936), Ph.D.
Professor of Mathematics 2803 Nation Avenue

* Resigned, May 31, 1956.

† Absent on leave, August 15 through December 31, 1956.

‡ Resigned, August 31, 1956.

§ Resigned, June 30, 1957.

¶ Absent on leave, February 1, 1956, through August 31, 1957.

- GEORGE C. GLOCKLER (1952), Ph.D.
Visiting Lecturer in Chemistry 3910 Darby Road, Hope Valley
- JAMES S. GLOTFELTY (1955), M.D.
Assistant Professor of Hospital Administration Staff Quarters, Veterans Hospital
- IRVING J. GOFFMAN (1955), A.B.
Instructor in Economics 1011 Alabama Avenue
- CLARENCE GOHDES (1930), Ph.D.
Professor of English 2737 Circle Drive
- JOSEPH LEONARD GOLDNER (1950), M.D.
Professor of Orthopedic Surgery 602 East Forest Hills Boulevard
- *MRS. HALINA ZUKOWSKI GOLDSMITH (1950), R.N., B.S., M.L.
Assistant Professor of Nursing 918 Monmouth Avenue
- JEWETT GOLDSMITH (1949), M.D.
Assistant Professor of Psychiatry 918 Monmouth Avenue
- MCCHESNEY GOODALL (1954), M.D., Ph.D.
Visiting Associate Professor of Physiology 152 Pinecrest Road
- GEORGE E. GOODE (1956), M.A.
Temporary Instructor in Mathematics 2824 Ervin Road
- WALTER GORDY (1946), Ph.D.
Professor of Physics 2521 Perkins Road
- RICHARD BABSON GRANT (1952), Ph.D.
Assistant Professor of Romance Languages 1013 Rosehill Avenue
- †IRVING EMERY GRAY (1930), Ph.D.
Professor of Zoology 124 Pinecrest Road
- ‡PAUL S. GREENLAW (1955), Ph.D.
Instructor in Political Science
- §EUGENE GREULING (1948), Ph.D.
Associate Professor of Physics 2414 Perkins Road
- KEITH SANFORD GRIMSON (1930-42; 1945), M.D.
Professor of Surgery 3313 Devon Road, Hope Valley
- PAUL MAGNUS GROSS (1919), Ph.D.
William Howell Pegram Professor of Chemistry 3816 Dover Road, Hope Valley
- DORIS C. GROSSKREUTZ (1956), M.D.
Assistant Professor of Anesthesiology 61 Oakwood Drive
Chapel Hill, N. C.
- JULIA REBECCA GROUT (1924), M.S.
Professor of Physical Education 804 Fourth Street
- NORMAN GUTTMAN (1951), Ph.D.
Assistant Professor of Psychology 1802 Sunset Avenue
- ‡WILLY HAEERLI (1954), Ph.D.
Visiting Assistant Professor of Physics
- HOWARD N. HAINES (1943), B.S.
Assistant Professor of Civil Engineering 2732 Dogwood Road
- FRANK GREGORY HALL (1926-42; 1945), Ph.D.
Professor of Physiology and Pharmacology 122 Pinecrest Road
- HUGH MARSHALL HALL (1952), Ph.D.
Assistant Professor of Political Science 814 Watts Street

* Resigned, June 30, 1957.

† Absent on sabbatical leave, fall semester, 1956-57.

‡ Resigned, August 31, 1956.

§ Absent on leave, spring semester, 1956-57.

- LOUISE HALL (1931), S.B. Arch., Ph.D.
Associate Professor of Architecture Box 6636, College Station
- JOHN HAMILTON HALLOWELL (1942), Ph.D.
Professor of Political Science 2709 Augusta Drive
- EDWIN CROWLEY HAMBLIN (1931), M.D.
Associate Professor of Obstetrics and Gynecology
and Professor of Endocrinology 810 Forest Hills Boulevard
- * WILLIAM BASKERVILLE HAMILTON (1936), Ph.D.
Professor of History 2256 Cranford Road
- PHILIP HANDLER (1939), Ph.D.
Professor of Biochemistry and Nutrition 2529 Perkins Road
- JOHN KENNEDY HANKS (1954), M.A.
Assistant Professor of Music 1400 North Duke Street
- FRANK ALLAN HANNA (1948), Ph.D.
Professor of Economics 2239 Cranford Road
- OSCAR CARL EDVARD HANSEN-PRÜSS (1930), M.D. 3303 Surrey Road, Hope Valley
Professor of Medicine in Charge of Clinical Microscopy
- EARL THOMAS HANSON (1946), Ph.D.
Assistant Professor of Political Science 613 Swift Avenue
- ARREN MAYNOR HARDEE (1956), A.M.
Instructor in Romance Languages 2707 Legion Avenue
- ELLWOOD SCOTT HARRAR (1936), Ph.D.
Professor of Wood Technology 2228 Cranford Road
- PAUL HARRAWOOD (1956), M.S. in C.E.
Instructor in Civil Engineering 105 West Woodridge Drive
- JEROME SYLVAN HARRIS (1936), M.D.
Professor of Pediatrics and
Associate Professor of Biochemistry 2907 Horton Road
- FRANCIS PARKS HARRISON (1947), Ph.D.
Associate Professor of Physical Education 2722 Circle Drive
- JULIAN DERYL HART (1930), M.D.
Professor of Surgery Route 1, Duke University Road
- GEORGE CORBIN HARWELL (1935), Ph.D.
Associate Professor of English 2115 Wilson Street
- CHARLES ROY HAUSER (1929), Ph.D.
Professor of Chemistry 1020 Rosehill Avenue
- CAROLINE ELIZABETH HELMICK (1949), M.D.
Associate in Preventive Medicine and Public Health and
Director of Student Health, Woman's College East Campus
- JAMES PAISLEY HENDRIX (1938), M.D.
Associate Professor of Medicine and Therapeutics 144 Pinecrest Road
- SIMFON K. HENINGER (1955), B.Litt. (Oxon.) Ph.D.
Instructor in English 101 Faculty Apartments
- † STEPHEN DUNCAN HERON, JR. (1950), M.S.
Assistant Professor of Geology 1506 Echo Road
- DUNCAN CHARTERIS HETHERINGTON (1930), Ph.D., M.D.
Professor of Anatomy K-3B University Apartments
- ALBERT HEYMAN (1953), M.D.
Associate Professor of Medicine 910 Arrowhead Road
 Chapel Hill, N. C.

* Absent on sabbatical leave, spring semester, 1956-57.

† Absent on sabbatical leave, fall semester, 1956-57.

- JOHN BAMBER HICKAM (1947), M.D.
Professor of Medicine 713 Anderson Street
- ARTHUR OWEN HICKSON (1929), Ph.D.
Associate Professor of Mathematics Box 27, West Durham Station
- DOUGLAS GREENWOOD HILL (1931), Ph.D.
Professor of Chemistry Box 275, Route 2, St. Mary's Road
- MARCUS EDWIN HOBBS (1935), Ph.D.
Professor of Chemistry 115 Pinecrest Road
- LESLIE BENJAMIN HOHMAN (1946), M.D.
Professor of Psychiatry 1520 Hermitage Court
- *IRVING BRINTON HOLLEY, JR. (1947), Ph.D.
Associate Professor of History 6 Duke University Apartments
Fifth and Markham Avenue
- WILLIAM HOLLISTER (1955), M.D.
Associate in Surgery Moore County Hospital, Pinehurst, N. C.
- FREDERIC B. M. HOLLYDAY (1956), Ph.D.
Instructor in History Apartment 4
718 Underwood Avenue
- FRANCES VIRGINIA LEE HOLTON (1947), M.A.
Assistant Professor of Physical Education 407 Erwin Apartments
- CALVIN BRYCE HOOVER (1925), Ph.D., Litt.D.
James B. Duke Professor of Economics 1702 Duke University Road
- EDWARD CHARLES HORN (1946), Ph.D.
Associate Professor of Zoology 2509 Cascadilla Street
- DORIS AHLEE HOWELL (1955), M.D.
Assistant Professor of Pediatrics 2519 Pickett Road
- JOHN CHASE HOWELL (1954), M.A.
Instructor in Sociology 1006 Demerius Street
- WAYLAND ELROY HULL (1953), Ph.D.
Assistant Professor of Physiology 2708 Circle Drive
- HAROLD J. HUMM (1954), Ph.D.
Associate Professor of Botany 920 Monmouth Avenue
- DON DOUGAN HUMPHREY (1945), Ph.D.
Professor of Economics 2802 Legion Avenue
- MRS. WANDA SANBORN HUNTER (1947), Ph.D.
Associate Professor of Zoology 803 Second Street
- PATRICK HUNTLEY (1955), M.A.
Instructor in Economics 1719 James Street
- ALLAN S. HURLBURT (1956), Ph.D.
Professor of Education 112 Buchanan Boulevard
- †CHESTER FOY HWANG (1954), B.S. in M.E.
Instructor in Mechanical Engineering
- PETER ILKOW (1956), Ph.D.
Instructor in German 206 Watts Street
- ‡THELMA MARGUERITE INGLES (1949), R.N., M.A.
*Associate Professor of Nursing Education and
Director, Division of Nursing Education* 1412 North Duke Street
- JOSEPH K. ISLEY (1955), M.D.
Associate in Radiology 2417 Highland Avenue

* Absent on sabbatical leave, 1956-57.

† Resigned, May 31, 1956.

‡ Absent on sabbatical leave, June 1, 1956 through May 31, 1957.

- ANN MADELINE JACOBANSKY (1953), R.N., B.S.N.E., M.Ed.
Professor of Nursing Westover Park Apartments
- *MERLE E. JACOBS (1954), Ph.D.
Temporary Instructor in Zoology
- †NORMAN E. JARRARD (1956), M.A.
Instructor in English P. O. Box 526, Chapel Hill, N. C.
- MARIANNA DUNCAN JENKINS (1948), Ph.D.
Associate Professor of Art 619 Morehead Avenue
- HOWARD EIKENBERRY JENSEN (1931), Ph.D.
Professor of Sociology 143 Pinecrest Road
- FREDERICK CHARLES JOERG (1947), M.B.A.
Professor of Economics 2116 Pershing Street
- ‡BETTY SUE JOHNSON (1955), B.S.N.E.
Instructor in Psychiatric Nursing
- TERRY WALTER JOHNSON, JR. (1954), Ph.D.
Assistant Professor of Botany 944 Lambeth Circle, Poplar Apartments
- EDWARD ELLSWORTH JONES (1953), Ph.D.
Assistant Professor of Psychology 1705 Forest Road
- ARCHIBALD CURRIE JORDAN (1925), M.A.
Assistant Professor of English 147 Pinecrest Road
- BRADY RIMBEY JORDAN (1927), Ph.D.
Professor of Romance Languages 117 Pinecrest Road
- LEMUEL RUSSELL JORDAN (1956), M.A.
Assistant Professor of Hospital Administration and
Assistant Superintendent of Duke Hospital in Charge of
Out-Patient Clinic 231 Flemington Road, Chapel Hill, N. C.
- HELEN LOUISE KAISER (1943), R.P.T.T.
Assistant Professor of Physical Rehabilitation 804 Fourth Street
- WILLIAM ARTHUR KALE (1952), B.D., D.D.
Professor of Christian Education 500 East Markham Avenue
- HENRY KAMIN (1948), Ph.D.
Assistant Professor of Biochemistry 2417 Perkins Road
- WALTER KEMPNER (1934), M.D.
Professor of Medicine 1505 Virginia Avenue
- §CHRISTOPHER KENDRIS (1955), Ph.D.
Instructor in Romance Languages
- VAN LESLIE KENYON, JR. (1945), M.M.E.
Professor of Mechanical Engineering Route 2, Hillsboro, N. C.
- GRACE PARDRIDGE KERBY (1947), M.D.
Associate Professor of Medicine Box 3328, Duke Hospital
- GREGORY ADAMS KIMBLE (1952), Ph.D.
Associate Professor of Psychology 1815 Hillcrest Drive
- NORMAN KIRSCHNER (1956), Ph.D.
Associate in Biochemistry 614 North Gregson Street
- THEODORE G. KLEIN (1955), B.S., Lieutenant Commander, U. S. Navy
Assistant Professor of Naval Science 2011 Woodrow Street

* Resigned, August 31, 1956.

† Spring Semester, 1956-57.

‡ Resigned, October 15, 1956.

§ Resigned, August 31, 1956.

- WILLIAM KLENZ (1947), M.A.
Assistant Professor of Music P.O. Box 856, Chapel Hill, N. C.
- WILLIAM H. KNISELY (1956), Ph.D.
Assistant Professor of Anatomy 2114 Sprunt Street
- *LOIS NINA KNOWLES (1953), R.N., B.S.N.
Instructor in Nursing Arts
- EDWARD M. KNOX, JR. (1955), B.S., Captain, U. S. Air Force
Instructor in Air Science 3411 Denise Street
- †RUTH M. KOCH (1953), M.S.
Assistant Professor of Nursing
- SIGMUND KOCH (1942-47; 1948), Ph.D.
Professor of Psychology Route 2, Durham, N. C.
- ‡LUCY JULIETTE KOESY (1955), R.N., B.S.N.E.
Instructor in Nursing Arts 10 Bel Air Apartments
- §CLARENCE FERDINAND KORSTIAN (1930), Ph.D.
Professor of Silviculture 4 Sylvan Road
- BARNET KOTTLER (1953), Ph.D.
Instructor in English 521 East Club Boulevard
- PAUL JACKSON KRAMER (1931), Ph.D.
James B. Duke Professor of Botany 2251 Cranford Road
- ROBERT KRAMER (1947), LL.B.
Professor of Law 108 Pinecrest Road
- EDWARD KREADY KRAYBILL (1939), M.S.E.
Associate Professor of Electrical Engineering 2726 Circle Drive
- WILLIAM R. KRIGBAUM (1952), Ph.D.
Assistant Professor of Chemistry 2015 Woodland Drive
- GEORGE FREDERIC KUDER (1948), Ph.D.
Professor of Psychology 2516 Perkins Road
- EDWARD CHARLES KUNKLE (1948), M.D.
Professor of Neurology 2525 Perkins Road
- WESTON LABARRE (1946), Ph.D.
Associate Professor of Anthropology 1311 Alabama Avenue
- CREIGHTON LACY (1953), B.D., Ph.D.
Associate Professor of Missions and Social Ethics 2714 Dogwood Road
- GORDON C. LAHEY (1956), B.S. in E.E.
Visiting Instructor in Electrical Engineering 29A Brookwood Gardens
Burlington, N. C.
- CHARLES EARL LANDON (1926), Ph.D.
Professor of Economics 1514 Edgevale Road
- THOMAS A. LANGFORD (1956), B.D.
Temporary Instructor in Undergraduate Religion 913 Lambeth Circle
Poplar Apartments
- JOHN TATE LANNING (1927), Ph.D.
Professor of History 3007 Surrey Road, Hope Valley
- JOHN E. LARSH, JR. (1943), Sc.D.
Associate Professor of Parasitology Memorial Hospital, Chapel Hill, N. C.
- ELVIN REMUS LATTY (1937), J.D., J.Sc.D.
Professor of Law 3620 Hathaway Road, Hope Valley

* Resigned, August 31, 1956.

† Resigned, September 17, 1956.

‡ Resigned, June 30, 1957.

§ Absent on sabbatical leave, fall semester, 1956-57.

- RICHARD H. LEACH (1955), Ph.D.
Assistant Professor of Political Science 1419 Dollar Avenue
- * BENJAMIN FRANKLIN LEIMERT (1930), Ph.D.
Associate Professor of Economics 123 Pinecrest Road
- HAROLD WALTER LEWIS (1949), Ph.D.
Associate Professor of Physics 2307 Sprunt Street
- MARTHA MODENA LEWIS (1933), M.A.
Associate Professor of Physical Education 407 Erwin Apartments
- RALPH ELTON LEWIS (1941), M.S. in M.E.
Assistant Professor of Mechanical Engineering 1401 Alabama Avenue
- CHARLES HARRIS LIVENGOD, JR. (1946), LL.B.
Professor of Law 2804 Chelsea Circle, Hope Valley
- DANIEL A. LIVINGSTONE (1956), Ph.D.
Assistant Professor of Zoology 1010 Minerva Avenue
- CHARLES E. LLEWELLYN, JR. (1955), M.D.
Assistant Professor of Psychiatry Hamstead Court
- † GEORGE TOWNSEND LODGE (1953), Ph.D.
Associate Professor of Psychology 804 Third Street
- ARTHUR HILL LONDON, JR. (1932), M.D.
Associate in Pediatrics 306 South Gregson Street
- ERNEST CROFT LONG (1956), M.D.
Assistant Professor of Physiology and Pharmacology
and Associate in Pediatrics Westover Park Apartments
- HANS LÖWENBACH (1940), M.D.
Professor of Psychiatry and Physiology Box 79, Route 3
- CHARLES LUCIEN BAKER LOWNDES (1934), S.J.D.
James B. Duke Professor of Law 2016 Club Boulevard
- WILLIAM S. LYNN, JR. (1954), M.D.
Associate in Medicine and in Biochemistry Duke Hospital
- ANGUS M. MCBRYDE (1931), M.D.
Associate Professor of Pediatrics 410 East Forest Hills Boulevard
- MRS. PAULINE WAYNE McCASKILL (1954), B.S.N.E.
Instructor in Medical Nursing E2D University Apartments
- CHARLES O. McDONALD (1956), M.A.
Instructor in English 227 Dacian Avenue
- GELOLO McHUGH (1946), Ph.D.
Assistant Professor of Psychology Mt. Sinai Road
- HENRY McINTOSH (1955), M.D.
Associate in Medicine 1807 Hillcrest Drive
- JAMES THOMAS McKEEL (1956), B.E.E.
Instructor in Electrical Engineering Smith Apartments, Watts Street
- † LIONEL WILFRED MCKENZIE, JR. (1948), B.Litt. (Oxon.), M.A.
Associate Professor of Economics 1026 West Trinity Avenue
- JOHN ROBERT McLAREN (1956), M.D.
Associate in Radiology Duke Hospital
- JONATHAN COLLINS McLENDON (1952), Ph.D.
Associate Professor of Education 944 Lambeth Circle, Poplar Apartments

* Absent on sabbatical leave, 1956-57.

† Resigned, January 31, 1957.

‡ Absent on leave, spring semester, 1956-57.

- ROBERT M. MCLEOD (1955), Ph.D.
Instructor in Mathematics 208 Buchanan Boulevard
- LEWIS J. MCNURLEN (1952), Ph.D.
Instructor in Sociology 2713 Circle Drive
- HARRY THURMAN MCPHERSON (1955), M.D.
Associate in Medicine 875 Louise Circle, Poplar Apartments
- SAMUEL D. MCPHERSON, JR. (1949), M.D.
Associate in Ophthalmology 29 Oak Drive
- JOHN NELSON MACDUFF (1956), M.M.E.
Professor of Mechanical Engineering 2733 Dogwood Road
- DOUGLAS BLOUNT MAGGS (1930), J.D., S.J.D.
Professor of Law 3940 Dover Road, Hope Valley
- JOHN E. MAJESKY (1955), B.S., Lieutenant, U. S. Navy
Assistant Professor of Naval Science 2522 Hillandale Road
- JOHN MCCLELLAN MAJOR (1953), Ph.D.
Instructor in English 1020 Urban Avenue
- FRANK MALINASKY (1955), B.S., Commander, U. S. Navy
Associate Professor in Naval Science 412 Carolina Circle
- ALAN KREBS MANCHESTER (1929), Ph.D.
Professor of History 2016 Myrtle Drive
- CLYDE LEONARD MANSCHRECK (1954), B.D., Ph.D.
Assistant Professor of Undergraduate Religion 1022 Lakewood Avenue
- *PHILIP NICHOLAS SETON MANSERGH (1956), D.Phil. (Oxon.), Ph.D. (Cantab.)
Visiting Professor and Senior Research Associate in History Department of History
- GEORGE MARGOLIS (1947), M.D.
Professor of Pathology 3838 Rugby Road
- JOSEPH ELDRIDGE MARKEE (1943), Ph.D.
James B. Duke Professor of Anatomy 1015 Denierius Street
- SIDNEY DAVID MARKMAN (1947), Ph.D.
Associate Professor of Art History and Archaeology 919 Urban Avenue
- MRS. ELSIE W. MARTIN (1930), M.S.
Professor of Dietetics Box 3713, Duke Hospital
- FRANK J. S. MATURO (1955), Ph.D.
Temporary Instructor in Zoology D-10 Westover Park Apartments
- WILLIAM CARY MAXWELL (1930), Ph.D.
Associate Professor of German 142 Pinecrest Road
- OTTO MEIER, JR. (1934), M.S., E.E.
Associate Professor of Electrical Engineering 916 Monmouth Avenue
- ELIJAH EUGENE MENESEE, JR. (1940), M.D.
Associate Professor of Medicine 2205 Cranford Road
- M. VICTOR MICHALAK (1950), A.M.
Assistant Professor of English 854 Louise Circle, Poplar Apartments
- GUSTAVUS H. MILLER (1955), Ph.D.
Instructor in Romance Languages Cedar Terrace, R.F.D. 1
- MARGARET EMMA MILLER (1954), R.N., B.S.N.E.
Instructor in Surgical Nursing 2113 Englewood Avenue
- * Spring semester, 1956-57.

- ARCHIE E. MILLIS (1956), B.S.
Assistant Professor of Hospital Administration Veterans Hospital
- CAROL L. MITCHUM (1955), R.N., B.S.
Instructor in Obstetric Nursing 25 Rogerson Drive, Chapel Hill N. C.
- JOHN THEODORE MOHAT (1955), Ph.D.
Instructor in Mathematics 1913 Essex Road
- ROBERT JOHN MONTFORT (1940), B.A.
Assistant Professor of Physical Education 3300 Cole Mill Road
- WILLIAM EDGAR MORRIS (1955), M.A.
Instructor in English 88 Hamilton Road, Chapel Hill, N. C.
- ASHTON BYROM MORRISON (1955), Ph.D., M.D.
Associate in Pathology Duke Hospital
- CLARENCE L. MORRISON (1954), B.S., Major, U. S. Marine Corps
Assistant Professor of Naval Science 3415 Denise Street
- ELIZABETH MOSES (1954), R.N., B.S.N.E., M.Ed.
Assistant Professor of Nursing and Assistant to the Dean, School of Nursing Box 2126, Hanes House
- EARL GEORGE MUELLER (1945), B.M., M.A., M.F.A.
Associate Professor of Art 1108 Watts Street
- MRS. JULIA WILKINSON MUELLER (1939-41; 1946), M.A.
Associate Professor of Music 1108 Watts Street
- HERSCHEL VICTOR MURDAUGH (1956), M.D.
Associate in Medicine Duke Hospital
- ROBERT J. MURPHY, JR. (1950), M.D.
Associate in Pediatrics Hillsboro, N. C.
- *ROBERT MUSGRAVE (1955), M.D.
Associate in Orthopedics
- HIRAM EARL MYERS (1926), S.T.M., D.D.
Professor of Biblical Literature 141 Pinecrest Road
- GEORGE W. NACE (1951), Ph.D.
Assistant Professor of Zoology 2021 Pershing Street
- AUBREY WILLARD NAYLOR (1952), Ph.D.
Associate Professor of Botany 881 Louise Circle, Poplar Apartments
- HENRY M. NEBEL, JR. (1956), A.M.
Visiting Assistant Professor of Russian 907 Lambeth Circle
Poplar Apartments
- GLENN ROBERT NEGLEY (1946), Ph.D.
Professor of Philosophy 1700 Shawnee Street
- ERNEST WILLIAM NELSON (1926), Ph.D.
Associate Professor of History 939 Lambeth Circle, Poplar Apartments
- BARBARA CAROL NEWBORG (1952), M.D.
Associate in Medicine 1503 Virginia Avenue
- HENRY WINSTON NEWSON (1948), Ph.D.
Professor of Physics 1111 North Gregson Street
- WILLIAM McNEAL NICHOLSON (1935), M.D.
Professor of Medicine in Charge of Postgraduate Education and Disease of Metabolism 824 Anderson Street
- WALTER MCKINLEY NIELSEN (1925), Ph.D.
James B. Duke Professor of Physics 139 Pinecrest Road

* Resigned, June 30, 1956.

- WALTER D. OBRIST (1956), Ph.D.
Assistant Professor of Medical Psychology 2412 West Club Boulevard
- GUY LEARY ODOM (1943), M.D.
Professor of Neurosurgery 2812 Chelsea Circle, Hope Valley
- *HOWARD T. ODUM (1954), Ph.D.
Assistant Professor of Zoology
- SIDNEY OLANSKY (1956), M.D.
Associate Professor of Dermatology and Syphilology 1720 Vista Street
- HENRY JOHN OOSTING (1932), Ph.D.
Professor of Botany 2642 University Drive
- EDWARD STEWART ORGAIN (1934), M.D.
Professor of Medicine 3321 Devon Road, Hope Valley
- RODERICK B. ORMANDY (1953), M.A.
Assistant Professor of Medical Speech Pathology 2906 Erwin Road
- ROBERT TAPPAN OSBORN (1954), B.D., Ph.D.
Instructor in Undergraduate Religion 216 Monmouth Avenue
- JOHN R. OVERMAN (1955), M.D.
*Associate Professor of Bacteriology and
Assistant Professor of Medicine* Duke Hospital
- HARRY ASHTON OWEN, JR. (1951), B.E.E., M.S.E.
Assistant Professor of Electrical Engineering 1506 Woodburn Road
- AUBREY EDWIN PALMER (1944), B.S. in E., C.E.
Associate Professor of Civil Engineering 2525 Highland Avenue
- HAROLD TALBOT PARKER (1939), Ph.D.
Associate Professor of History 923 Dacian Avenue
- JOSEPH B. PARKER, JR. (1953), M.D.
*Associate Professor of Psychiatry and
Chief of Psychiatry at Veterans Hospital* 2921 Horton Road
- ROY T. PARKER (1954), M.D.
Associate Professor of Obstetrics and Gynecology 111 Pinecrest Road
- OSCAR A. PARSONS (1954), Ph.D.
*Assistant Professor of Psychology and
of Medical Psychology* 1702 Forest Road
- JOEL FRANCIS PASCHAL (1954), LL.B., Ph.D.
Associate Professor of Law Chapel Hill Road
- RANSOM RATHBONE PATRICK (1954), B.A., M.F.A.
Professor of Aesthetics and Art 116 Pinecrest Road
- LEWIS PATTON (1926), Ph.D.
Associate Professor of English 614 Swift Avenue
- WILLIAM BERNARD PEACH (1951), Ph.D.
Assistant Professor of Philosophy 920 Dacian Avenue
- GALMADGE LEE PEELE (1939), M.D.
*Associate Professor of Anatomy and
Assistant Professor of Medicine* Duke Hospital
- CHARLES HENRY PEETE, JR. (1953), M.D.
Assistant Professor of Obstetrics and Gynecology 859 Louise Circle
Poplar Apartments
- WILLIAM P. J. PEETE (1955), M.D.
*Assistant Professor of Surgery and Assistant to
the Dean of the School of Medicine* Winton Road

* Resigned, August 31, 1956.

- * EDWARD JOSEPH PELLICCIARO (1954), Ph.D.
Research Instructor in Mathematics
- KENNETH E. PENROD (1950), Ph.D.
*Professor of Physiology and Pharmacology and
 Assistant to the Dean of the School of Medicine* 2745 Dogwood Road
- HAROLD SANFORD PERRY (1932), Ph.D.
Associate Professor of Botany 2302 Cranford Road
- SOLOMON PAUL PERRY (1953), M.D.
Assistant Professor of Radiology 3602 Rugby Road
- ELBERT LAPSLEY PERSONS (1930), M.D.
*Associate Professor of Medicine and Associate Professor
 of Preventive Medicine and Public Health* 723 Anderson Street
- WALTER SCOTT PERSONS (1930), A.B.
Assistant Professor of Physical Education 612 Swift Avenue
- ERNST PESCHEL (1953), M.D.
Assistant Professor of Medicine 2306 Pershing Street
- JAMES EMMET PETERSON (1954), B.C.E., M.S.C.E.
Assistant Professor of Civil Engineering 1009 Cobb Street
- RAY C. PETRY (1937), Ph.D., LL.D.
Professor of Church History 128 Pinecrest Road
- OLAN LEE PETTY (1952), Ph.D.
Associate Professor of Education 2519 Shenandoah Avenue
- JOHN BERNARD PFEIFFER, JR. (1949), M.D.
Assistant Professor of Medicine 1705 Maryland Avenue
- JAMES HENRY PHILLIPS (1946), Ph.D.
Associate Professor of Undergraduate Religion 2517 Perkins Road
- JANE PHILPOTT (1951), Ph.D.
Assistant Professor of Botany 804 Fourth Street
- HENRY FLOYD PICKETT (1935), A.B.
Associate in Medical Art and Illustration and Photographer 2506 Cornwallis Road
- KENNETH LEROY PICKRELL (1944), M.D.
Professor of Plastic Surgery 3 Sylvan Road
- * ROGER STANTON PINKHAM (1955), Ph.D.
Instructor in Mathematics
- JACQUES C. POIRIER (1955), Ph.D.
Assistant Professor of Chemistry 2502 State Street
- FRANCIS ROSS PORTER (1930), B.S.
*Superintendent of the Hospital and Professor
 of Hospital Administration* Hillsboro, N. C.
- RAYMOND W. POSTLETHWAIT (1955), M.D.
*Professor of Surgery and Assistant
 Chief of Surgery at Veterans Hospital* Veterans Hospital
- MARY ALVERTA POSTON (1930), A.M.
Associate in Bacteriology 512 Watts Street
- MARY POTEAT (1935), Ph.D.
Assistant Professor of English 103 Faculty Apartments
- BENJAMIN E. POWELL (1946), Ph.D. 3609 Hathaway Road, Hope Valley
Professor in the Faculty of Arts and Sciences

* Resigned, August 31, 1956.

- *RICHARD LIONEL PREDMORE (1950), D.M.L.
Professor of Romance Languages 2413 Perkins Road
- JAMES LIGON PRICE, JR. (1952), Ph.D.
Associate Professor of Undergraduate Religion 2723 Circle Drive
- VIENNA MARGARET PRIOLETTI (1956), M.M.
Visiting Instructor in Music Box 7247, College Station
- †REECE TREGO PROSSER (1955), A.B.
Research Instructor in Mathematics
- ALBERT ELSWORTH PUGH (1953), M.D.
*Assistant Professor of Medicine and Chief,
Professional Service, Veterans Hospital* Staff Quarters, Veterans Hospital
- VERGIL ERWIN QUEEN (1956), B.D.
Lecturer in Church Administration 2000 Cedar Street
- DAVID RABIN (1953), B.S. in M.E., LL.B., LL.M. (Pat.)
Instructor in Mechanical Engineering 538 Audubon Drive
Greensboro, N. C.
- CHARLES WILLIAM RALSTON (1953), B.S., M.F., Ph.D.
Assistant Professor of Forest Soils 600 Gregson Street
- ROBERT STANLEY RANKIN (1927), Ph.D.
Professor of Political Science 1227 Vickers Avenue
- BENJAMIN ULYSSES RATCHFORD (1928), Ph.D.
Professor of Economics 133 Pinecrest Road
- ISRAEL THOMAS REAMER (1931), Ph.G.
Associate in Pharmacy 2406 West Club Boulevard
- KENNETH JAMES REARDON (1947), A.M.
Associate Professor of English 2821 Winton Road
- FREDERICK JEROME REED (1935), M.E., M.S.
Professor of Mechanical Engineering 2203 Englewood Avenue
- ROBERT JAMES REEVES (1930), M.D.
Professor of Radiology 920 Anderson Street
- EDWIN KELSEY REGEN (1951), B.D., D.D.
Lecturer in Church Administration 1106 Watts Street
- †HUGO MANLEY REICHARD (1951), Ph.D.
Instructor in English
- MRS. WALLY REICHENBERG-HACKETT (1946), Ph.D.
Assistant Professor of Psychology College Station
- CHARLES L. RENNELL (1956), M.D.
Assistant Professor of Radiology 2010 Sprunt Street
- †THOMAS D. REYNOLDS (1953), Ph.D.
Assistant Professor of Education 2326 Glendale Avenue
- JOSEPH BANKS RHINE (1927), Ph.D.
Director of the Parapsychology Laboratory Route 3, Hillsboro, N. C.
- JOHN MCFARLANE RHOADS (1956), M.D.
Associate Professor of Psychiatry 814 Forest Hills Boulevard
- McMURRY SMITH RICHEY (1954), B.D., Ph.D.
*Assistant Professor of the Philosophy of
Christian Education* 2725 Dogwood Road
- JOHN A. RITCHIE (1953), M.D.
Associate in Psychiatry 209 West Woodridge Drive

* Absent on sabbatical leave, 1956-57.

† Resigned, August 31, 1956.

‡ Absent on leave, February 1, 1956, through January 31, 1957.

- *HENRY STOUTIE ROBERTS, JR. (1948), Ph.D.
Associate Professor of Zoology 3507 Duke Homestead Road
- JOHN HENDERSON ROBERTS (1931), Ph.D.
Professor of Mathematics 2813 Legion Avenue
- †PERCIVAL ROBERTSON (1956), Ph.B., Ph.D., LL.D.
Visiting Professor of Geology Faculty Apartments
- ELIOT H. RODNICK (1949), Ph.D.
*Professor of Psychology, and Director
of Clinical Training in Psychology* 2806 Legion Avenue
- E. STANFIELD ROGERS (1952), M.D.
Associate Professor of Pathology Duke Hospital
- ROBERT SAMUEL ROGERS (1937), Ph.D., F.A.A.R.
Professor of Latin 148 Pinecrest Road
- THEODORE ROPP (1938), Ph.D.
Associate Professor of History 302 Woodridge Drive
- JESSE LEE ROSE (1936), Ph.D.
Associate Professor of Latin and Greek 203 Maynard Avenue
- NORMAN F. ROSS (1937), D.D.S.
Associate in Dentistry 2811 Chelsea Circle, Hope Valley
- ROBERT SEAMAN ROWE (1956), D.Eng.
Professor of Civil Engineering 1107 Urban Avenue
- DONALD FRANCIS ROY (1950), Ph.D.
Assistant Professor of Sociology 604 North Gregson Street
- JOHN JESSE RUDIN, II (1945), Ph.D.
Associate Professor of Speech 1019 Rosehill Avenue
- *MABEL F. RUDISILL (1948), Ph.D.
Associate Professor of Education 1719 Roxboro Road
- JULIAN MEADE RUFFIN (1930), M.D.
Professor of Medicine 816 Anderson Street
- RALPH WAYNE RUNDLES (1945), Ph.D., M.D.
Professor of Medicine 132 Pinecrest Road
- †REAMES HAWTHORNE SALES (1949), B.D., Ph.D.
Assistant Professor of Undergraduate Religion 2800 University Drive
- HERMAN SALINGER (1955), Ph.D.
Professor of German 3403 Windsor Way, Hope Valley
- §MURIEL I. SANDEEN (1950), Ph.D.
Assistant Professor of Zoology 415 West Laurel Avenue, Woodstock, Ill.
- AARON P. SANDERS (1956), M.A.
*Assistant Professor of Radiology and Director of
the Isotope Laboratory* 810 Demerius Street
- CHARLES RICHARD SANDERS (1937), Ph.D.
Professor of English 103 Pinecrest Road
- MRS. EUGENIA CURTIS SAVILLE (1947), M.A.
Assistant Professor of Music 1103 Anderson Street
- LLOYD BLACKSTONE SAVILLE (1946), Ph.D.
Associate Professor of Economics 1103 Anderson Street

* Absent on sabbatical leave, spring semester, 1956-57.

† Fall semester, 1956-57.

‡ Absent on sabbatical leave, fall semester, 1956-57.

§ Absent on sabbatical leave, 1956-57.

- JOHN HENRY SAYLOR (1928), Ph.D.
Professor of Chemistry 2500 Perkins Road
- *THOMAS ANTON SCHAEFER (1950), B.D., Ph.D.
Assistant Professor of Historical Theology 1523 Woodburn Road
- CLARENCE HENRY SCETTLE (1946), Ph.D.
Associate Professor of Sociology 119 Pinecrest Road
- HERMAN MAX SCHIEBEL (1939), M.D.
Associate in Surgery 1020 Anderson Street
- KNUT SCHMIDT-NIELSEN (1952), Mag.Sc., Ph.D.
Professor of Zoology 2402 Chapel Hill Road
- FRANCIS XAVIER SCHUMACHER (1937), B.S.
Professor of Forestry 6 Sylvan Road
- †RUDOLPH MATHIAS SCHUSTER (1953), Ph.D.
Research Associate and Visiting Assistant Professor of Botany
- ESTHER LOUISE SCHWERTMAN (1947), Ph.D.
Assistant Professor of English 909 Lambeth Circle, Poplar Apartments
- GEORGE WILLIAM SCHWERT, JR. (1946), Ph.D.
Associate Professor of Biochemistry 611 Hammond Street
- WILL CAMP SEALY (1946), M.D.
Professor of Thoracic Surgery 2232 Cranford Road
- †RUSSELL P. SEBOLD, III (1955), Ph.D.
Instructor in Romance Languages
- WALTER JAMES SEELEY (1925), E.E., M.S.
James B. Duke Professor of Electrical Engineering 1005 Urban Avenue
- JAMES HUSTEAD SEMANS (1953), M.D.
Associate Professor of Urology 1415 Bivins Street
- DAVID GORDON SHARP (1939), Ph.D.
Associate Professor of Biophysics in Experimental Surgery and Biophysicist to Duke Hospital 202 Francis Street
- LAMBERT ARMOUR SHEARS (1927), Ph.D.
Professor of German 917 Green Street
- MILDRED MARGUERITE SHERWOOD (1939), R.N.
Associate in Pediatric Nursing Hanes House
- JOHN HERMAN SHIELDS (1926), A.M.
Associate Professor of Accounting 1315 Vickers Avenue
- MELVIN G. SHIMM (1953), LL.B.
Associate Professor of Law 1702 Vista Street
- WILLIAM WARNER SHINGLETON (1947), M.D.
Associate Professor of Surgery 1510 Carolina Avenue
- †JOSEPH ROBERT SHOENFIELD (1952), Ph.D.
Assistant Professor of Mathematics 2329 Elm Street, Youngstown, Ohio
- WADE H. SHUFORD (1954), M.D.
Associate Professor of Radiology 1203 Gregson Street
- HERBERT O. SIEKER (1955), M.D.
Assistant Professor of Medicine 8 V.A. Staff Apartments, Erwin Road
- GEORGE ADDISON SILVER, III (1946), M.D.
Assistant Professor of Psychiatry 3910 Dover Road

* Absent on sabbatical leave, 1956-57.

† Resigned, August 31, 1956.

‡ Absent on leave, 1956-57.

- ALBERT J. SILVERMAN (1953), M.D.
Assistant Professor of Psychiatry
- EDWARD CHRISTIAN SIMMONS (1947), Ph.D.
Professor of Economics 2510 Perkins Road
- WILLIAM HAYS SIMPSON (1930), Ph.D.
Associate Professor of Political Science 1406 Dollar Avenue
- ALBERT G. SMITH (1951), M.D.
Assistant Professor of Pathology 826 Louise Circle, Poplar Apartments
- MRS. CYNTHIA JANE ALLEN SMITH (1955), B.A.
Instructor in Physical Education 1204 West Markham Avenue
- DAVID TILLERSON SMITH (1930), M.D., Litt.D.
*James B. Duke Professor of Bacteriology and
Associate Professor of Medicine* 3437 Dover Road, Hope Valley
- GROVER C. SMITH, JR. (1952), Ph.D.
Assistant Professor in English 1109 North Gregson Street
- HILRIE SHELTON SMITH (1931), Ph.D., D.D., Litt.D.
James B. Duke Professor of American Religious Thought 2721 Dogwood Road
- JOHN B. K. SMITH (1953), M.B., Ch.B., M.D.
Associate in Psychiatry Highland Hospital, Asheville, N. C.
- *ROBERT SIDNEY SMITH (1932), Ph.D.
Professor of Economics 2236 Cranford Road
- DOROTHY SPANGLER (1954), B.S., M.A.
Instructor in Physical Education 201 Faculty Apartments
- CHRISTOPHER SPENCER (1955), Ph.D.
Instructor in English 13 Duke University Apartments
- JOSEPH JOHN SPENGLER (1934), Ph.D.
James B. Duke Professor of Economics 2240 Cranford Road
- CHARLES D. SPIELBERGER (1955), Ph.D.
*Associate in Medical Psychology and
Assistant Professor of Psychology* 1710 Forest Road
- HERTHA D. E. SPONER (1935), Ph.D.
Professor of Physics 3309 Avon Road, Hope Valley
- FAYE EURLINE SPRING (1956), R.N., B.A.
Assistant Professor of Psychiatric Nursing 918 Monmouth Avenue
- DALE FISHER STANSBURY (1946), J.S.D.
Professor of Law 1008 West Trinity Avenue
- EUGENE ANSON STEAD, JR. (1947), M.D.
Florence McAlister Professor of Medicine 2122 Myrtle Drive
- CHARLES RONALD STEPHEN (1950), M.D.C.M., D.A., R.C.P.&S.
Professor of Anesthesiology and Chief Anesthetist 1608 University Drive
- HARRY R. STEVENS (1947), Ph.D.
Assistant Professor of History Box 5484, Duke Station
- LIONEL STEVENSON (1955), B.Litt. (Oxon.), Ph.D., F.R.S.L.
James B. Duke Professor of English 3106 Devon Road
- WILLIAM JAMES MCKELVIE STEWART (1956), B.A., B. in Comm.
Visiting Assistant Professor of Economics 2413 Perkins Road
- †MRS. VERNA K. STICHT (1955), B.S.
Instructor in Medical-Surgical Nursing 2117 Englewood Avenue

* Absent on sabbatical leave, spring semester, 1956-57.

† Resigned, May 29, 1957.

- WILLIAM FRANKLIN STINESPRING (1936), Ph.D.
Professor of Old Testament 1107 Watts Street
- FREDERICK WILLIAM STOCKER (1943), M.D.
Associate Professor of Ophthalmology 1124 West Forest Hills Boulevard
- *MRS. HAZEL DUVAL STONE (1956), A.B.
Temporary Instructor in Mathematics 2501 West Club Boulevard
- HOWARD AUSTIN STROBEL (1948), Ph.D.
Assistant Professor of Chemistry 1510 Woodburn Road
- PASCHAL NIELSEN STRONG, JR. (1956), Ph.D.
Lecturer in Psychology Veterans Hospital
- WIPPERT ARNOT STUMPF (1948), Ph.D.
Associate Professor of Education 127 Pinecrest Road
- CHARLES WOODROW STYRON (1946), M.D.
Associate in Medicine 920 Williamston Drive, Raleigh, N. C.
- ROBERT BURKE SUITT (1940), M.D.
Assistant Professor of Psychiatry 215 Faculty Apartments
- ELIZABETH READ SUNDERLAND (1939-42; 1943), Ph.D.
Associate Professor of Art Box 6416, College Station
- LOUIS EARL SWANSON (1949), A.B.
*Associate Professor of Hospital Administration
and Assistant Supervisor of the Hospital* 2610 Shenandoah Avenue
- †GEORGE HERBERT SWIFT (1954), Ph.D.
Instructor in Mathematics
- MEHMET TURHAN TANER (1956), M.S. in C.E.
Instructor in Civil Engineering 2822 Erwin Road, Poplar Apartments
- WOLFGANG TARABA (1956), Ph.D.
Assistant Professor of German B-3A University Apartments
- HAYWOOD MAURICE TAYLOR (1930), Ph.D.
Associate Professor of Biochemistry and Professor of Toxicology 2620 University Drive
- WILLIAM A. TERRILL (1956), Ph.D., C.P.A.
Visiting Associate Professor of Economics 85 Hamilton
Chapel Hill, N. C.
- KENNETH JOHN THARP (1953), B.S. in C.E.
Assistant Professor of Civil Engineering 2610 Acadia Street
- ‡BRINLEY THOMAS (1956), Ph.D.
*James B. Duke Visiting Professor and
Senior Research Associate in Economics* Department of Economics
- JOSEPH MILLER THOMAS (1930), Ph.D.
Professor of Mathematics 2215 Cranford Road
- WALTER LEE THOMAS, JR. (1932-35; 1937-42; 1945), M.D.
Professor of Obstetrics and Gynecology 3615 Dover Road, Hope Valley
- EDGAR TRISTRAM THOMPSON (1935), Ph.D.
Professor of Sociology 138 Pinecrest Road
- ALFRED TISCHENDORF (1955), Ph.D.
Instructor in History 1017 Gloria Avenue
- RAYMOND P. TODD (1955), B.S.E.E., Colonel, U. S. Air Force
Professor of Air Science and Tactics 409 Edwards Street

* Fall semester, 1956-57.

† Resigned, May 31, 1956.

‡ Spring semester, 1956-57.

- * ELLIAS TORRE (1951), M.A.
Assistant Professor of Romance Languages 1121 Anderson Street
- PHILIP H. TRICKEY (1956), M.S. in E.E.
Lecturer in Electrical Engineering 112 West Lavender Street
- JAMES NARDIN TRUESDALE (1930), Ph.D.
Associate Professor of Greek 105 Pinecrest Road
- † WILLIAM B. TUCKER (1954), M.D.
Professor of Medicine and Chief of Tuberculosis Service, Veterans Hospital
- ARLIN TURNER (1953), Ph.D.
Professor of English 1514 Woodburn Road
- MRS. VIOLET HORNER TURNER (1943), M.D.
Assistant Professor of Obstetrics and Gynecology 2106 Cole Road
- RICHARD LOVEJOY TUTHILL (1953), Ed.D.
Professor in the Faculty of Arts and Sciences 2709 Dogwood Road
- MALCOLM P. TYOR (1955), M.D.
Associate in Medicine 922 Green Street
- LUELLA JANE UHRHANE (1947), R.N., M.P.H.
Assistant Professor of Health Education 208 Faculty Apartments
- CHARLES ROWE VAIL (1939), M.S. in E.E., Ph.D.
Associate Professor of Electrical Engineering 2730 Circle Drive
- RICHARD W. VAN FOSSEN (1956), A.M.
Instructor in English 619 Swift Avenue
- F. JOHN VERNBERG (1951), Ph.D.
Assistant Professor of Zoology 854 Louise Circle, Poplar Apartments
- † DAN OTTO VIA (1955), B.D., Ph.D.
Instructor in Undergraduate Religion
- PATRICK R. VINCENT (1954), Ph.D.
Assistant Professor of Romance Languages 1601 Bivins Street
- MRS. CHRISTA VON ROEBEL (1954), M.D.
Associate in Obstetrics and Gynecology 2303 Pershing Street
- WARREN CHASE VOSBURGH (1928), Ph.D.
Professor of Chemistry 2319 Englewood Avenue
- ALBERT EDWARD WACKERMAN (1938), M.F.
Professor of Forest Utilization 3610 Dover Road, Hope Valley
- HALLAM WALKER (1955), Ph.D.
Instructor in Romance Languages 1051½ Hardee Street
- ARLEY JOHN WALTON (1948), B.S.L., D.D.
Professor of Church Administration and Director of Field Work 803 Second Street
- † LORING BAKER WALTON (1929), Lic. ès L., Ph.D.
Professor of Romance Languages 2235 Cranford Road
- CALVIN LUCIAN WARD (1952), Ph.D.
Assistant Professor of Zoology 801 Third Street
- † CHARLES EUGENE WARD (1927), Ph.D.
Professor of English 2429 Perkins Road
- SETH L. WARNER (1955), Ph.D.
Research Instructor in Mathematics 920 Dacian Avenue

* Absent on sabbatical leave, 1956-57.

† Resigned, August 31, 1956.

‡ Absent on sabbatical leave, spring semester, 1956-57.

- JAMES VAUGHN WARREN (1942), M.D.
*Professor of Medicine and Associate
 Professor of Physiology* 1406 Woodburn Road
- *ALBERT D. WARSHAUER (1955), M.D.
*Assistant Professor of Anesthesiology and
 Chief of Anesthesiology of Durham Veterans
 Administration Hospital*
- JAMES M. WATKINS (1954), A.M.
Instructor in Romance Languages 704 Shepherd Street
- GEORGE ARCHIBALD WATSON, JR. (1950), M.D.
Associate in Pediatrics 306 South Gregson Street
- RICHARD LYNNESS WATSON, JR. (1939), Ph.D.
Associate Professor of History 109 Pinecrest Road
- VERNON ELGIN WAY (1930), A.M., M.A.
Associate Professor of Greek 918 Urban Avenue
- †HENRY WEITZ (1950), Ed.D.
Associate Professor of Education 2716 Circle Drive
- PAUL WELSH (1948), Ph.D.
Assistant Professor of Philosophy 102 Faculty Apartments
- JOSEPH CABLE WETHERBY (1947), M.A.
Assistant Professor of English 2306 Prince Street
- ARTHUR WHITEHILL (1956), Ph.D.
Visiting Associate Professor of Economics Coker Drive
 Chapel Hill, N. C.
- EDWARD S. WHITESIDES (1956), M.D.
Associate in Orthopedics 1701 Maryland Avenue
- MRS. EUGENIA REMLIN WHITRIDGE (1947), Ph.D.
Assistant Professor of Sociology Cornwallis Road
- GEORGE A. WICKES (1954), Ph.D.
Instructor in English 1012 Shepherd Street
- RUTH JANET WIEN (1949), M.S.
Assistant Professor of Social Service 1412 North Duke Street
- KARL MILTON WILBUR (1946), Ph.D.
Professor of Zoology 2404 Bruton Road
- LESLIE CLIFFORD WILBUR (1949), M.S.
Assistant Professor of Mechanical Engineering Route 3, Hillsboro, N. C.
- PELHAM WILDER, JR. (1949), Ph.D.
Assistant Professor of Chemistry 2525 Glendale Avenue
- MRS. HILDA POPE WILLETT (1948), Ph.D. 1953 Clark Avenue, Cameron Village
Associate Professor of Bacteriology Raleigh, North Carolina
- JAMES WESLEY WILLIAMS (1937), A.B., B.S. in C.E., M.S.
Professor of Civil Engineering 206 Swift Avenue
- †WALLACE LEON WILLIAMS (1955), B.E.E.
Instructor in Electrical Engineering
- ROBERT MARSHALL WILLIAMSON (1951), Ph.D.
Assistant Professor of Physics 20 Meadowbrook Drive
- FREDERICK ELIPHAZ WILSON (1923), A.M.
Associate Professor of German 1020 Demerius Street

* Resigned, April 15, 1956.

† Absent on sabbatical leave, fall semester, 1956-57.

‡ Resigned, May 31, 1956.

- KELLOGG VAN WILSON (1955), Ph.D.
Assistant Professor of Psychology 1813 Hillcrest Drive
- ROBERT RENBERT WILSON (1925), Ph.D., LL.D.
Professor of Political Science 717 Anderson Street
- RUBY LELIA WILSON (1955), B.S.
Instructor in Nursing Arts 1420 Broad Street
- WILLIAM PRESTON WILSON (1950-54; 1955), M.D.
Associate Professor of Psychiatry 2604 Hillandale Road
- * THOMAS G. WINNER (1948), Ph.D.
Assistant Professor of Russian Language and Literature 58 Rue Monge
Paris 5e, France
- LOREN RALPH WITHERS (1949), M.S.
Assistant Professor of Music 2741 Dogwood Road
- BARNES WOODHALL (1937-43; 1945), M.D.
Professor of Neurosurgery 4006 Dover Road, Hope Valley
- ROBERT HILLIARD WOODY (1929), Ph.D.
Professor of History 2648 University Drive
- ALMA LORRAINE WOODYARD (1954), M.A.
Instructor in Physical Education 201 Faculty Apartments
- MRS. JULIA ANN HEDGEPEITH WRAY (1955), M.F.A.
Instructor in Physical Education Apartment E-1, 802 Green Street
- DEWITT WRIGHT (1943), J.D.
*Associate in Hospital Administration and
Assistant Superintendent of the Hospital* Route 3, Hillsboro, N. C.
- JAMES B. WYNGAARDEN (1956), M.D.
Associate Professor of Medicine 1004 Demerius Street
- JAMES G. YOHO (1956), Ph.D.
Associate Professor of Forest Economics School of Forestry
- CHARLES R. YOUNG (1954), Ph.D.
Instructor in History Route 1, Box 22
- DAVID BRUCE YOUNG (1956), B.S. in E.E.
Instructor in Electrical Engineering 801 Third Street
- PAUL YOUNG (1956), M.A.
*Professor in the Faculty of Arts and Sciences and
Lecturer in Church Music* 1110 Shepherd Street
- W. GLENN YOUNG (1954), M.D.
Associate in Surgery 2222 Elba Street
- †THEODORE C. ZAHN (1955), Ph.D.
Visiting Assistant Professor of Psychology 2708 Legion Avenue
- H. T. ZANKEL (1956), M.D.
*Associate in Rehabilitation and Chief of
Physical Medicine and Rehabilitation at
Durham Veterans Administration Hospital* 612 West Club Boulevard
- KARL EDWARD ZENER (1928), Ph.D.
Professor of Psychology Route 2, Sparger Road

PART-TIME INSTRUCTORS

- NORMAN HOWARD BARLOW (1955), A.B.
Romance Languages 822 Louise Circle, Poplar Apartments
- EUGENE M. BERNSTEIN (1956), Ph.D.
Physics Westover Park Apartments

* Absent on sabbatical leave, 1956-57.

† June 1, 1956, to May 1, 1957.

- ELAINE SYLVIA BERSON (1956), M.S.W.
Sociology 806 Third Street
- LAWRENCE AVERY BLACKWELL (1956), A.B.
Physics 1035 Men's Graduate Center
- JAMES BOATWRIGHT, III (1956), A.M.
English 1017½ Gloria Avenue
- *FREDERICK WILLIAM BORNHAUSER (1956), A.M. (Oxon.)
English 1017½ Gloria Avenue
- JESSE H. BROWN (1956), B.D.
Undergraduate Religion 311 West Trinity Avenue
- MRS. ANNE MARIE BRYAN (1953), Baccalauréat, Lic. en Droit
Romance Languages 1003 South Duke Street
- DEWEY K. CARPENTER (1956), Ph.D.
Chemistry and Research Associate 820 Demerius Street
- ROBERT EUGENE CLUTE (1956), A.M.
Political Science 858 Louise Circle, Poplar Apartments
- EDWARD KEITH DIX (1956), A.B.
Economics 1912 House Avenue
- CHARLES A. DUKES, JR. (1956), A.B.
Economics 707 Louise Circle, Poplar Apartments
- JACK E. FERNANDEZ (1956), Ph.D.
Chemistry and Research Associate 603-A Maplewood Avenue
- GERALD R. GIBBONS (1956), LL.B.
Economics 819 Second Street
- MRS. JANET ISABEL COON GILLETTE (1956), A.B.
Romance Languages 509 North Street, Chapel Hill, N. C.
- FRED MONROE GOTTHEIL (1956), A.B.
Economics Men's Graduate Center
- ROBERT DORSET GRAVES (1956) A.M.
English 1005 Buchanan Boulevard
- HENRY ALLEN HARGREAVES (1956), A.M.
English 1101 North Duke Street
- *MRS. DOROTHY E. HARTH (1955), A.M.
Romance Languages 846 Louise Circle, Poplar Apartments
- †ALGERNON SIDNEY JOYNER (1956), B.S.
Mathematics Franklinton, N. C.
- *HOWARD E. KAPLAN (1956), M.A.T.
Romance Languages Men's Graduate Center
- ELIZABETH NORFLEET KING (1956), A.M.
Zoology 219 Epworth Inn
- MRS. JUANITA KREPS (1955), Ph.D.
Economics Morgan Creek Road, Chapel Hill, N. C.
- SAMUEL DUNCAN McMILLAN, JR. (1956), A.B.
Physical Education, Trinity College 705 Shepherd Street
- †WILLIAM LEROY MESSMER (1956), B.S.
Mathematics 2007 University Drive
- †MRS. VIRGINIA GLASGOW MICHALAK (1956), A.M.
English 854 Louise Circle, Poplar Apartments

* Fall semester, 1956-57.

† Spring semester, 1956-57.

*FRANK NANIA (1956), M.Ed. <i>Education</i>	6 Aycock Apartments
JAMES PARTHEMOS (1955), A.M. <i>Economics</i>	1112 Alabama Avenue
WILLIAM CONRAD PINSCHMIDT, JR. (1956), M.S. <i>Zoology</i>	Men's Graduate Center
LOUIS D. QUIN (1956), Ph.D. <i>Chemistry and Research Associate</i>	814 Louise Circle, Poplar Apartments
WALTER PASCHAL REEVES, JR. (1956), M.S., Th.M. <i>English</i>	2626 Pickett Road
PHILIP BRUCE SECOR (1956), A.B. <i>Political Science</i>	326 Clark Street
JAMES N. SETTLE (1956), A.B. <i>Latin</i>	205 Wilson Court, Chapel Hill, N. C.
WILLIAM ROWLEY SHAWVER (1956), B.S. in M.E. <i>Mechanical Engineering and Mathematics</i>	1324 Vickers Avenue
WILLIAM KENNETH STARS (1953), M.A. <i>Aesthetics, Art and Music</i>	1916 Glendale Avenue
LAWRENCE ROBERT STIRES, JR. (1956), A.B. <i>Romance Languages</i>	1801 Lakewood Avenue
ROBERT WORTH TAYLOR (1954), B.S. in M.E. <i>Mechanical Engineering</i>	1205 Sixth Street
ROBERT LEON THURSTONE (1953), M.S. in E.E. <i>Electrical Engineering</i>	400 Laurel Hill Road, Chapel Hill, N. C.
BRUCE W. VON ZELLEN (1956), M.S. <i>Zoology</i>	1001 Lamond Avenue
HARRY WILSON WELLS (1956), A.M. <i>Zoology</i>	212 Men's Graduate Center
†MRS. CAROL VAN SICKLE WETHERBY (1956), A.M. <i>English</i>	2306 Prince Street
ROBERT MILTON WILL (1956), A.M. <i>Economics</i>	Men's Graduate Center

Educational Administration

PAUL MAGNUS GROSS, Ph.D. <i>Vice-President in the Division of Education and Dean of the University</i>	3816 Dover Road, Hope Valley
RICHARD LOVEJOY TUTHILL, Ed.D. <i>University Registrar</i>	2709 Dogwood Road
ROBERTA FLORENCE BRINKLEY, Ph.D., LL.D. <i>Dean of the Woman's College</i>	East Campus
ALAN KREBS MANCHESTER, Ph.D. <i>Dean of Trinity College and Assistant to the Vice-President in the Division of Education</i>	2016 Myrtle Drive
WALTER JAMES SEELEY, E.E., M.S. <i>Dean of the College of Engineering</i>	1005 Urban Avenue

* February 1 through May 31, 1957.

† Spring semester, 1956-57.

*WILLIAM COUNCILL ARCHIE, Ph.D.
Associate Dean of Trinity College

†SUSAN A. CLAY, M.A.
Acting Associate Dean of Academic Instruction, Woman's College

ROBERT B. COX, A.M.
Dean of Undergraduate Men 2319 Club Boulevard

ELLEN HARRIS HUCKABEE, A.M.
Dean of Undergraduate Instruction, Woman's College 1507 West Pettigrew Street

MARIANNA DUNCAN JENKINS, Ph.D.
Associate Dean of Undergraduate Instruction, Woman's College 619 Morehead Avenue

CHARLES BUCHANAN JOHNSON, Ed.D.
Assistant Dean of Trinity College 833 Moreen Dairy Road

BARNEY LEE JONES, B.D.
Assistant Dean of Trinity College Pickett Road

LEWIS J. McNURLEN, Ph.D.
Assistant Dean of Trinity College 2713 Circle Drive

HOWARD AUSTIN STROBEL, Ph.D.
Assistant Dean of Trinity College 1510 Woodburn Road

MARY GRACE WILSON, A.M.
Dean of Undergraduate Women Faculty Apartments

MRS. FRANCIS M. WHITAKER, M.A.
Assistant Dean of Undergraduate Women 212 Faculty Apartments

WILLIAM LAMBRETH BRINKLEY, JR., A.B., M.P.S.
Assistant Registrar 2740 Dogwood Road

MRS. ELIZABETH ANDERSON PERSONS, A.M.
Director of Admissions, Woman's College 612 Swift Avenue

EVERETT BROADUS WEATHERSPOON, A.B.
Director of Admissions, Trinity College and the College of Engineering 125 Pinecrest Road

PATRICIA KATHERINE MCBRIDE, A.B.
Field Secretary, Undergraduate Admissions E3D University Apartments

PAUL CORWIN PARKER, A.B.
Field Secretary, Undergraduate Admissions Randolph Road

‡CHARLES BUCK ROBERTS, A.M.
Field Secretary, Undergraduate Admissions

MARGARET L. COLEMAN, A.M.
Central Records Supervisor 918 Urban Avenue

MRS. DOROTHY HOLT McELDUFF, A.B.
Recorder, College of Engineering 100 Forest Wood Road

LOUISE SEABOLT, A.M.
Recorder 204 Faculty Apartments

§HENRY WEITZ, Ed.D.
Director of the Bureau of Testing and Guidance 2716 Circle Drive

ROBERT MERLE COLVER, Ed.D.
Assistant Director, Bureau of Testing and Guidance 2720 Circle Drive

W. SCOTT GEHMAN, JR., Ph.D.
Senior Counselor, Bureau of Testing and Guidance 1312 Shepherd Street

* Resigned, August 31, 1956.

† Resigned, July 31, 1956.

‡ Resigned, June 30, 1956.

§ Absent on sabbatical leave, fall semester, 1956-57.

MARCUS EDWIN HOBBS, Ph.D. <i>Dean of the Graduate School of Arts and Sciences</i>	115 Pinecrest Road
EARL THOMAS HANSON, Ph.D. <i>Director of Admissions, Graduate School of Arts and Sciences</i>	613 Swift Avenue
JAMES CANNON, A.M., Th.M., D.D., LL.D. <i>Dean of the Divinity School</i>	2022 Myrtle Drive
*ELWOOD SCOTT HARRAR, Ph.D. <i>Dean of the School of Forestry</i>	
†CLARENCE FERDINAND KORSTIAN, Ph.D. <i>Dean of the School of Forestry</i>	4 Sylvan Road
DALE FISHER STANSBURY, J.S.D. <i>Acting Dean of the School of Law</i>	1008 West Trinity Avenue
WILBURT CORNELL DAVISON, D.Sc., M.D., LL.D. <i>Dean of the School of Medicine</i>	Duke Hospital
ANN MADELINE JACOBANSKY, R.N., B.S.N.E., M.Ed. <i>Dean of the School of Nursing</i>	Westover Park Apartments
JAMES T. CLELAND, M.A., Th.D., D.D. <i>Dean of the Chapel</i>	2117 Myrtle Drive
PAUL HIBBERT CLYDE, Ph.D. <i>Director of the Summer Session</i>	1311 Carolina Avenue
OLAN L. PETTY, Ph.D. <i>Assistant Director of the Summer Session</i>	2519 Shenandoah Avenue
CAZLYN GREEN BOOKHOUT, Ph.D. <i>Director of the Duke Marine Laboratory</i>	1307 Alabama Avenue
HELEN MILDRED KENDALL, A.B. <i>Administrative Assistant and Secretary of the Faculty, Divinity School</i>	Faculty Apartments

Business Administration

ALFRED SMITH BROWER, A.B. <i>Business Manager and Treasurer</i>	614 West Campus
GERHARD CHESTER HENRICKSEN, M.A., C.P.A. <i>Comptroller and Assistant Treasurer</i>	216 Forest Wood Drive
CHARLES EDWARD JORDAN, A.B., LL.D. <i>Secretary of the University</i>	813 Vickers Avenue
EDWIN CONSTANT BRYSON, LL.B. <i>University Attorney</i>	818 Anderson Street
JOHN M. DOZIER, A.B. <i>Associate Secretary of the University</i>	2111 Ruffin Street
WILLIAM EDWARD WHITFORD, A.B. <i>Director of Operation and Maintenance</i>	146 Pinecrest Road
THEODORE WARREN MINAH, B.S. in H.M. <i>Director of Dining Hall Operations</i>	2117 Club Boulevard
MARY ROBINSON, B.A., B.S. <i>Manager, the Dining Halls, Woman's College</i>	2729 Circle Drive
ELIZABETH MARGUERITE KAISER, B.A., M.S. <i>Manager, the Dining Halls, Men's Graduate Center</i>	921 Lambeth Circle Poplar Apartments

* Appointed, March 1, 1957.

† Absent on sabbatical leave, fall semester, 1956-57. Resigned, February 29, 1957.

JOHN ELLWOOD DOXEY, A.M. <i>Purchasing Agent</i>	1004 Broad Street
JESSE DAVID WELLONS, JR. <i>Manager of Stores Operations</i>	2703 Augusta Drive
WALTER GLEN COOPER, B.A. <i>Personnel Director</i>	1008 North Gregson Street
WILLIAM KENNETH HOWARD, B.S. <i>Maintenance Engineer</i>	106 Pinecrest Road
HENRY FRANKLIN BOWERS, A.B. <i>Manager of Operations</i>	2505 Perkins Road
ERNEST LEE HAYWOOD, A.B. <i>Chief Accountant</i>	104 Hilton Avenue
STEPHEN C. HARWARD, A.B., C.P.A. <i>Internal Auditor</i>	1614 Delaware Avenue
KENNETH R. MANNING, A.B. <i>Supervisor, Tabulating Department</i>	Duke University Apartments
HENRY SPECK MORGAN, A.B. <i>Bursar</i>	409 Francis Street
CARL A. BOY <i>Superintendent of Utilities</i>	2214 Erwin Road
JOHN C. GIFT <i>Superintendent of Building Maintenance</i>	811 Fifth Street

Public Relations

CHARLES EDWARD JORDAN, A.B., LL.D. <i>Vice-President in the Division of Public Relations</i>	813 Vickers Avenue
JOHN M. DOZIER, A.B. <i>Assistant to the Vice-President in the Division of Public Relations; Executive Secretary, University Scholarship Committee</i>	2111 Ruffin Street
CLARENCE E. WHITEFIELD, A.B. <i>Director, Bureau of Public Information</i>	800 East Forest Hills Boulevard
NORMAN NELSON, A.M. <i>Assistant Director, Bureau of Public Information</i>	1305 Carolina Avenue
GLENN EDWARD MANN, A.B. <i>Director, Office of Athletic Information</i>	Cole Mill Road
FANNIE YARBROUGH MITCHELL <i>Director, Appointments Office</i>	16 Alastair Court

Alumni Affairs

CHARLES AUBREY DUKES, A.B. <i>Director</i>	1309 Oakland Avenue
ANNE GARRARD, A.M. <i>Assistant Director</i>	1411 North Duke Street
WILLIAM ALLEN TYREE, A.B. <i>Field Secretary, Duke University Loyalty Fund</i>	610 Buchanan Boulevard
CHARLOTTE CORBIN, A.B. <i>Assistant to the Director</i>	403 West Chapel Hill Street

ROGER L. MARSHALL, A.B. <i>Editor, Alumni Register, and Assistant to the Director</i>	1829 Forest Road
FRED W. WHITENER, A.B. <i>Secretary of Local Associations</i>	1524 Woodburn Road
PATSY G. MCKAY, A.B. <i>Recorder</i>	Route 2, Roxboro Road
CLARK C. COOK, A.B. <i>Editorial Assistant</i>	2337 Glendale Avenue
THAD W. SPARKS <i>University Photographer</i>	1308 Ruffin Street

Student Life

HERBERT JAMES HERRING, M.A., LL.D. <i>Vice-President in the Division of Student Life</i>	2010 Myrtle Drive
PAUL ROBEY BRYAN, Ph.D. <i>Conductor of the Marching Band</i>	1 Duke University Apartments
ROBERT B. COX, A.M. <i>Dean of Undergraduate Men</i>	2319 Club Boulevard
WILLIAM J. GRIFFITH, A.B. <i>Director, Student Union</i>	2312 Wilson Street
*MRS. JAMES FOSTER BARNES <i>Director of Woman's College Glee Club</i>	
†ANTON BREES <i>University Carillonneur</i>	
MRS. MILDRED LITTLE HENDRIX, B.S. <i>University Organist</i>	144 Pinecrest Road
PAUL YOUNG, M.A. <i>Director of Choral Music</i>	1110 Shepherd Street
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* Resigned, August 31, 1956.

† Resigned, September 30, 1956.

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* Resigned, June 30, 1956.

† Absent on sabbatical leave, fall semester, 1956-57.

‡ Absent on sabbatical leave, 1956-57.

§ Resigned, September 1, 1956.

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† Resigned, June 30, 1956.

‡ Resigned, November 26, 1955.

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UNDERGRADUATE INSTRUCTION

TRINITY COLLEGE

THE WOMAN'S COLLEGE

THE COLLEGE OF ENGINEERING

The Undergraduate Colleges



The three colleges exist as parts of a university community in which the student has full opportunity to take part. They have a unique role in this community as the centers of individual education for undergraduates, but as members of the University the colleges share in the extensive facilities of laboratory and field work, superior physical equipment, great libraries, and able faculties which only a major university can provide. They share the same campuses with the Graduate School of Arts and Sciences, the Law School, the Medical and Nursing Schools, the Divinity School, the School of Forestry, and the Duke Hospital. A wide range of activities, religious, intellectual, cultural, social, and athletic, is open to the entire University community. At the same time there are other activities and organizations designed specifically for members of each undergraduate college. The student may thus enjoy both the activities and the atmosphere of a small college and the broader facilities and challenges provided by the existence of a university community.

Although the three colleges have separate identities, they are closely inter-related. Students of Trinity College and the College of Engineering live in the same dormitories, belong to the same fraternities, hold membership in the same student government association, attend classes in the same buildings. The College of Engineering provides for the specialized interests of its students by offering training in technical fields. At the same time it recognizes the importance of the study of the humanities because it realizes that the engineer has definite responsibilities as a citizen and that these responsibilities cannot be properly stressed in the purely technical curricula. Engineering students, therefore, participate in the academic and extra-curricular life of the liberal arts college as well as in the training and campus activities peculiar to their own college.

As one of the colleges within the University system the Woman's College shares the advantages of the wider community, and yet it offers to its students the special opportunities and responsibilities which belong to a separate woman's college. Women students receive training in leadership by administering their own organizations and by participating in community projects. At the same time they have the stimulus which comes from co-educational classes and from the experience of working with men of other colleges in campus activities.

Duke University is concerned with developing the whole man. In its classrooms, libraries, and laboratories it is concerned with his mental and moral development, in its gymnasiums and on its playing fields, with his physical growth, and in its Chapel and religious program, with his spiritual well being. Although it has always been closely associated with the Methodist Church, Duke welcomes students of all faiths and encourages them to develop their spiritual lives in accordance with the tenets of their own creeds. The need of training for specialized professions and employments is recognized, but such training is incidental to a larger purpose. Through the variety of the subject matter, the insistence on a common core of fundamental courses, and an emphasis on a more intensive study of some selected subject, the colleges seek to give their students a knowledge and appreciation of the culture of the Western World and at the same time to provide a foundation for careers in business and the professions.

Whether in the classroom or on the campus the emphasis is on the individual. To this end, classes are kept small in size and close contact between professor and student is encouraged. Instructors, counsellors, advisers, and administrative officers are interested in the student as a person. In turn the student is expected to accept the responsibility of contributing to his own development, to his college, and to his university. The relationship of mutual service between the individual student and his college is designed to develop men of intelligence, integrity, and culture. From this relationship there has grown through a century and more a sense of achievement and high competence that enables Duke men and women to make their place in the world as effective citizens whatever their careers may be.

Admission to the Colleges



CANDIDATES may qualify for admission as members of the freshman class or as students with advanced standing. Since the enrollment is limited, the Committee on Admissions selects students who, in its judgment, are best qualified to benefit from the educational advantages which the colleges offer. The Committee bases its decision on the academic record of the candidate, on test scores, and on satisfactory evidence of good character and general fitness for college life at Duke. A visit to the campus for a personal interview with an officer of the University is of material benefit to the candidate and the Committee.

ADMISSION TO THE FRESHMAN CLASS: A candidate for admission to the freshman class must present at least fifteen acceptable units of secondary school credit.

For admission to Trinity College and the Woman's College twelve of the fifteen units must be in English, foreign language, history* and social studies, mathematics, and science. They must include three units in English, one unit in algebra, and one unit in plane geometry. The three remaining units are elective and may be selected from those subjects for which the school allows credit toward graduation; but it is recommended that they also be selected from the five subject fields listed above.

For admission to the College of Engineering seven of the fifteen units must be in English (3 units), chemistry or physics (1 unit), algebra (2 units), and plane geometry (1 unit). The remaining eight units are elective. At least five of them must be in English, foreign language, history and social studies, mathematics, and science. It is recommended that these five units be chosen from the following list:

English (in addition to the required 3 units).....	1 unit
Algebra (in addition to the required 2 units).....	½ to 1½ units
Trigonometry	½ unit
Solid Geometry	½ unit
Biology or chemistry or physics (in addition to the required unit)...	1 to 3 units
Foreign language	1 to 4 units
†History and social studies.....	1 to 4 units

The three additional units needed to make the total of fifteen may be selected from those subjects for which the school allows credit

* Candidates who do not present two acceptable units of history must take history in college.

† Engineering candidates who do not present at least one acceptable unit of history must take history in college.

toward graduation; but it is recommended that they also be chosen from the above list.

A graduate of an accredited secondary school who submits fifteen acceptable units of credit, who is recommended by his school principal, and who in all other respects meets the requirements of the Committee on Admissions may be admitted without examination. A candidate whose graduation is from a non-accredited school or about whom there may arise any other question as to qualification for admission may be required to take entrance examinations or such other tests as the Committee on Admissions may prescribe.

It is recommended that all candidates for admission to the freshman class take the Scholastic Aptitude Test of the College Entrance Examination Board or a similar program of tests administered on the Duke campus by the Duke University Bureau of Testing and Guidance. Details of the procedure to be followed in applying for either of these testing programs will be sent to each candidate for admission.

ADMISSION TO ADVANCED STANDING: A candidate for admission to advanced standing must have fulfilled the equivalent of the requirements for admission to the freshman class, must present official transcripts of all work completed in other institutions, and must have an honorable dismissal from each institution previously attended. Advanced standing candidates who have previously taken the Scholastic Aptitude Test of the College Entrance Examination Board should request the Board to send a report of their test scores to the Director of Admissions. All others are advised to take the Scholastic Aptitude Test or the program of tests administered by the Duke University Bureau of Testing and Guidance, as recommended for freshman candidates.

Credit for work completed at other institutions will be determined in relation to the curriculum requirements of the college in which the student enrolls at Duke.

A student who transfers with advanced standing to Trinity College or the Woman's College from a junior college must continue, for at least one semester in Trinity College or in the Woman's College, the foreign language he or she presents for minimum graduation requirements. Credit for courses in science offered for advanced standing in any of the undergraduate colleges by a transfer from a junior college will be determined by the departments concerned.

Transfer credits are tentatively evaluated pending the completion of two semesters of work in residence. To validate provisional credits the student must earn at least an average of C in a normal load of work. Transfer credit, in which grades of C or above have been earned, is rated at two quality points per semester hour when validated.

Courses in which grades of less than C have been earned are not acceptable for transfer credit.

The maximum amount of credit acceptable from a junior college is 60 semester hours, exclusive of physical education. No credit is given for work completed by correspondence, and credit for no more than six semester hours is allowed for extension courses. Any extension work accepted must be specifically approved by the dean of the college to which the student seeks admission.

ADMISSION OF SPECIAL STUDENTS: Upon the approval of the dean, students of mature age may be admitted for special work in such courses of instruction as they are qualified to take. They may not be admitted as candidates for a degree in a regular course unless they meet all normal requirements for admission.

ADMISSION PROCEDURE: Application for admission should be made to the Registrar, Duke University, Durham, North Carolina. Application forms and instructions will be sent to the candidate. It is the responsibility of the candidate to see that these forms are properly executed and, together with other requested material, sent promptly to the Office of Admissions.

Application prior to the final year of the secondary school course is not required. Formal steps looking toward admission should be initiated, however, early in the senior year and not later than February 1. Candidates for admission are requested to file all credentials by March 1. Candidates for admission to the Woman's College normally will receive notification of the decision of the Committee on Admissions between April 15 and May 1. Candidates for admission to Trinity College and the College of Engineering will be notified as decisions are made.

READMISSION OF FORMER STUDENTS: A student who, following withdrawal from college, desires to return should apply to the Registrar. When applying for readmission the student should make a detailed statement of his or her activities since leaving Duke University.

Financial Information and Living Accommodations



FEES paid by the students cover only a part of the cost of their instruction and of the operations of the University. Income from endowment and contributions from the alumni, alumnae, and other public-spirited men and women meet the balance, which constitutes more than half the total cost.

Fees

A registration fee of \$20.00 is required of all new students. This fee is payable only once; it is not refundable. A room reservation deposit of \$25.00 is also required. After a room is reserved, the deposit will not be refunded to accepted applicants who fail to enter the University. A tuition fee of \$325.00 and a general fee of \$75.00 are payable at the beginning of each semester. The general fee is in lieu of special fees usually charged for matriculation, use of laboratories, student health service, commencement, etc. Special fees for instruction in Applied Music are listed on page 113.

An advance deposit of \$25.00 is required of all students in residence at the time of spring registration in order to reserve a place in classes for the fall semester. This is applied toward payment of the general fee at the opening of the fall semester. The deposit will be refunded to students whom the University does not permit to return. Students who of their own volition fail to return are not entitled to a refund.

An advance deposit of \$25.00 is also required of old students who have been out of school for one or more semesters and have been accepted for readmission. It is applied toward payment of the general fee for the semester of readmission. The advance deposit is paid at the time of notification of acceptance and is not refundable.

An Air Force ROTC deposit of \$20.00 is required of students enrolling in Air Science to cover possible loss of military equipment issued to them. This deposit is refunded to the student upon return of issued equipment.

Refunds of tuition and other fees are made to students who withdraw within fourteen days after the beginning of the semester, with the exception of the advance deposits listed above. On and after the fifteenth day no refunds of fees are made. Stipulations governing the refunding of the \$25.00 room deposit are explained in the sections on Living Accommodations.

Students who register during the regular academic year for no more than two courses with a maximum credit of 8 semester hours are classified as special students. They are charged a registration fee of \$5.00 for each course, and \$21.50 for each semester hour of course credit. Students taking nine or more hours are charged full fees.

Students paying full fees may audit one or more courses without charge, provided they have the consent of the instructor. Students not paying full fees are charged \$10.00 for each audited course. Auditors submit no daily work, take no examinations, and receive no credit.

Students are entitled to one transcript free of charge. Additional copies are supplied at \$1.00 each. Records are not released when the Treasurer's Office reports an unpaid account.

Students may have their bills sent to parents or guardians provided the Treasurer has been notified in writing with sufficient antecedence. Failure of a student or of a parent or guardian to pay bills on the dates scheduled will debar the student from class attendance until his account is settled in full; subsequent withdrawal does not entitle him to a refund. No student is considered by the Faculty as a candidate for graduation until he has settled with the Treasurer for all his indebtedness to the University.

Estimated Expenses for an Academic Year

Incidental expenses depend upon the tastes and habits of the individual, but the estimated necessary expenses for an academic year are as follows:

	<i>Low</i>	<i>Moderate</i>	<i>Liberal</i>
Tuition	\$ 650.00	\$ 650.00	\$ 650.00
General Fee	150.00	150.00	150.00
Room Rent	175.00	175.00	225.00
Board	450.00	500.00	525.00
Laundry	30.00	40.00	50.00
Books	30.00	40.00	50.00
	<u>\$1485.00</u>	<u>\$1555.00</u>	<u>\$1650.00</u>

The actual fees and expenses, excluding travel and clothing, necessary for one year in residence as a student in Trinity College or the College of Engineering can be met with \$1485.00.

Student Aid

Duke University is interested in students with ability and ambition. It is the aim of the University Scholarship Committee and others affiliated with the Student Aid Program to provide, insofar as possible, the financial assistance required by worthy students. This assistance takes various forms. The actual cost to the University for each student

is more than twice the amount received from the student. The deficit is paid out of contributions and income from endowment. Scholarships and prizes enable students with inadequate resources to reduce the amount payable to the University. Loans are made available, and through the Student Employment Offices part-time jobs are arranged. Through the Student Aid Program an earnest effort is made to eliminate the economic status of the student as a criterion for admission.

Scholarships

Scholarships intended to aid needy and deserving students have been established from time to time by persons deeply interested both in Duke University and in the members of its student body. Scholarship endowments are held in trust and are kept separate from other holdings of the University. All income is applied in accordance with the terms of the gift or bequest.

Scholarships are awarded annually by a committee of the Faculty appointed by the President of the University. In some cases donors have specified certain limitations and conditions, but in all cases final award is made by the University Scholarship Committee.

Candidates for competitive scholarship prizes should initiate applications during the fall semester of the senior year of study in secondary school. Instructions concerning the specific requirements and deadline dates will accompany the application materials sent to applicants for these awards.

Candidates for remissions of tuition and scholarship grants should submit applications by April 15 of the year prior to the academic year in which assistance is sought.

All applications for scholarship prizes, scholarship grants, Industry scholarships or remissions of tuition should be addressed to the Registrar, Duke University, Durham, North Carolina.

Details relative to scholarship prizes, industry scholarships, remissions of tuition, athletic awards, and scholarship grants are given in the *Bulletin of Undergraduate Instruction*.

Loans

A number of loan funds have been established for the benefit of the students of Duke University. The most important and largest is the Angier B. Duke Memorial Student Loan Fund, which is administered through an advisory committee of officers of the University. The amount available to be loaned depends upon the income from investments and on the amount repaid on loans previously made to students. The same committee of officers administers the other endowed loan funds of the University.

The committee in approving loans selects those students who, from the standpoint of character, scholastic attainment, personality and degree of financial need, are deserving of consideration.

The following regulations govern the operation of the loan fund program:

1. No loan will be made to a student who violates any of the regulations of the University or whose academic record is not satisfactory to the faculty.

2. As a general policy, a student must have spent one semester in residence before he is eligible to apply for a loan. During this period the loan committee will have an opportunity to acquaint itself with the worth and need of the individual applicants.

3. Loans will be made only to students who are taking approved courses of study that lead to a degree, and all loans must be arranged for not later than one week after the beginning of a semester.

4. Every applicant for a loan must give the names of three references who will be approached by the student Loan Office. Statements from these references must have been received and made a part of the file before any money will be advanced. None of these references may be a member of a borrower's family.

5. Long term loans are customarily made to defray only the expenses incurred for tuition, fees, or room rent.

6. Interest on long-term student loans accrues at the rate of 1% from the date of each note and is payable during or before the week prior to the graduation exercise of each of the school years during which the borrower is enrolled at Duke University. After the student leaves the University permanently, the interest rate rises to 3% for the five year period required for payment. Any notes unpaid at the end of this five year period will bear interest at the rate of 6% until they are paid in full.

An extension of two years at the 1% interest rate is granted to those borrowers receiving a degree of Doctor of Medicine at Duke University. This extension covers the two year internship required of all medical students. An extension at the 1% interest rate is also granted to those borrowers who continue their study in other institutions of higher learning. Proper proof of residence must be submitted annually to the Student Loan Office. Extensions of this sort will be renewed from year to year and the maximum period of extension will depend upon particular circumstance of each student.

7. Applications for loans should be made to the Loan Committee, Office of the Secretary, Duke University. A formal application for loan assistance may be made only on forms furnished in the Secretary's Office during the first week of each semester. The granting or withholding of a loan is a matter entirely within the discretion of the loan committee. A student is expected to use all other possible means

of securing financial assistance before applying for aid from the Loan Fund.

Loan funds available to undergraduates are listed in the *Bulletin of Undergraduate Instruction*.

Student Employment

Student employment offices are maintained to serve students who need part-time jobs. There are many opportunities both on the campus and in the city of Durham, and a considerable number of students each year help defray their college expenses by working.

Students may make application for part-time employment only after they have completed an application for admission and notification of acceptance has been given. The job application should be by letter prior to the reporting date for entrance, and a detailed job application form must be completed at the time of arrival at Duke University.

Those students in Trinity College and the College of Engineering in need of such employment may apply to Mr. J. M. Dozier, 217 Allen Building, West Campus. Students in the Woman's College should apply to the Assistant Dean of Undergraduate Women, 108 East Duke Building, East Campus.

Living Accommodations for Men

Craven, Crowell, Few, and Kilgo Quadrangles on the West Campus are reserved for undergraduate men. These quadrangles contain thirty-three Houses designated by letters of the alphabet from House A through House HH.

Beds and mattresses (39" x 74"), tables, chairs, dressers, mirrors, and window shades are furnished by the University. The student supplies linens, blankets and pillows. Rugs, if desired, are not to exceed 54 square feet in size.

Duke University desires to provide for its students a residential environment conducive to academic achievement, the development of high ideals, and sound character. The institution asks and believes that each student will cooperate in achieving these aims by arranging his personal belongings in an orderly manner, by caring for the buildings and furniture as he would do in his own home, and by observing a code based on gentlemanly behavior in an educational environment which demands respect for all residents. Regulations governing the occupancy of rooms will be supplied directly from the Housing Bureau when room reservations are made. Occupants are expected to abide by these regulations.

Living Accommodations for Women

Undergraduate women are required to live in Woman's College residence houses unless they are married or are living with parents or close relatives in the City. Under special circumstances, in the case of a mature student, the Dean may make an exception.

A counselor, who is a member of the Dean's staff, lives in each dormitory. She serves as adviser to individual students and, in co-operation with the student House Council, is responsible for the administration of the house.

The eight dormitories are alike in their organization. All four classes have full representation in each, approximately 30 spaces being reserved in each one for freshmen. Five of the dormitories, Alsbaugh, Bassett, Brown, Giles, and Pegram, have both single and double rooms. Southgate and Jarvis have no single rooms, and Aycock has only a few.

Rooms are rented for the full school year, unless special arrangements are made in advance with the Dean of Undergraduate Women, but payment may be made by semester. Each occupant of a double room is charged \$200.00 for the school year or \$100.00 per semester; the occupant of a single room, \$250.00 for the school year or \$125.00 per semester. Normally the rent for a shorter period of occupancy than a semester is \$1.00 per day with a minimum charge of \$25.00.

Room reservations are made with the Woman's College Housing Bureau. An applicant who has been officially accepted as a resident student may reserve a dormitory room by paying a room deposit of \$25.00. If this deposit is not made within ten days after she is notified of her acceptance, her admission is cancelled. The initial room deposit is effective for the entire college course of the student whose attendance during regular terms is continuous. This deposit will be refunded to resident students under the following conditions:

- a. Within thirty days after the student has been graduated.
- b. Upon the student's withdrawal from the University, provided written notice is received in the Housing Bureau by August 1, for cancellation of a reservation for the fall semester; and not later than January 15, for cancellation of a reservation for the spring semester.
- c. When the reasons requiring withdrawal are beyond the student's control.

No refund is made until the occupant has checked out of her room through the Housing Bureau and has settled all of her accounts with the Treasurer.

Dormitory rooms are reserved by upperclass students in accordance with the plan that is published during the school year. All rooms that have not been reserved on or before the announced date will be

considered vacant for the succeeding semester and will be assigned to others.

After a student has engaged a room, she is not permitted to move to another without the consent of the Woman's College Housing Bureau. A student leaving one room and occupying another without permission may be charged for both rooms for the entire semester. No student is allowed to rent or sublet her room to another occupant.

The Woman's College Housing Bureau selects a roommate for the new student who is assigned to a double room but has made no arrangements for a roommate. After a student has been in residence for one semester, however, she is responsible for obtaining and keeping a roommate if she continues to occupy a double room. If a student occupying a double room does not obtain a roommate within the time required—approximately two weeks after the beginning of the semester—she may be required to pay the rental consideration for the whole room.

Rooms are equipped with only the principal articles of furniture. The student provides her own linens, blankets, pillows, bedspreads, curtains, and lamps. She may supply additional articles such as scatter rugs and small tables or bookcases; but large rugs or overstuffed furniture, which make cleaning difficult, are prohibited.

Dining Service

The dining facilities on the West Campus include three cafeterias with multiple-choice menus, and the Oak Room where full meals and *a la carte* items are served. The cost for the academic year ranges from \$450.00 upward depending on the tastes of the individual. On the East Campus dining halls are located in the Union and in Southgate. Resident women may not board elsewhere than at these halls. The charge for board is \$200.00 per semester, payable at the time of registration.

In the Men's Graduate Center there is a cafeteria with multiple choice menus and a Coffee Lounge where sodas and sandwiches are served from 11:30 A.M. to 11:00 P.M. The prices in these dining rooms are the same as on the West Campus.

It is hoped that present rates may be maintained. Charges, however, are necessarily dependent on costs of labor, foods, and materials, and some adjustment may be necessary.

Due to the large number of those served in the dining halls, it is not possible to arrange special diets for individual students. Special diet for the sick is served in the infirmary.

The Libraries



THE UNIVERSITY LIBRARIES, with 1,244,880 volumes and 1,792,938 manuscripts, provide exceptional resources and facilities for study and research by undergraduate and graduate students, and by visiting scholars. Between 40,000 and 50,000 volumes are added annually, and 75 foreign and domestic newspapers and 4,443 periodicals are received currently. A large collection of microfilms of rare books, newspapers, and periodicals is available.

A Chemistry library (16,669 volumes), Physics-Mathematics library (18,713), and Biology-Forestry library (56,401) are housed for convenience of use in the buildings of these departments. The libraries of the Schools of Divinity (75,784), Law (107,563), Medicine (60,115) and of the College of Engineering (24,231), are also shelved in the buildings of these schools, all on the West Campus.

The General Library, centrally located on the West Campus, has 775,593 volumes in all other fields. It is the principle working and research collection for students in the humanities and social sciences. The collection has been developed with care to support the work of the undergraduate curriculum and the more specialized needs of graduate and post-doctoral research. Basic collections of source materials are supported by the important publications of criticism and discussion. There are large collections of general periodicals, of the publications of European Academies, and of public documents of state, federal, and foreign governments, and international organizations. The newspaper collection (over 13,000 volumes and 8,092 rolls of microfilm) is particularly strong in papers from the states of the Atlantic seaboard, both North and South, with extensive holdings of Ante-bellum and Civil War papers of North Carolina, South Carolina, and Virginia.

The manuscript collections, relating chiefly to the South Atlantic region with particular strength in the Confederate period, is most extensive in the field of history, but it contains important source material on all phases of social and economic life as well as politics. There are groups of manuscripts in American and British literature, with a notable Walt Whitman collection, and a number of important mediaeval manuscripts, chiefly lectionaries and copies of the New Testament. Among many special collections of note are the Guido Mazzoni library of Italian and comparative literature, the Lanson Collection of French literature, Goethe and Dante collections, collections on Brazil, Peru, Ecuador, and the Philippines, the Holl Church history

library, eighteenth-century English poetry and prose, a Socialist collection, the Arents tobacco collection, the Thomas collection of books on Chinese history and culture, the George Washington Flowers Collection of manuscripts, books, newspapers, and pamphlets dealing with all phases of Southern history, and the Trent collection of Walt Whitman books and manuscripts.

The General Library building, which was modernized and enlarged in 1949, contains many special features which contribute to the preservation of material and facilitate their use by students and research workers. The book stacks, manuscripts, and rare book storage and reading rooms are air-conditioned. Two hundred and fifty carrels, some completely enclosed, are available in the stacks as places of study for graduate students. Graduates and advanced students are permitted access to the stacks upon application. On the ground floor are a newspaper reading room with a battery of microfilm reading machines and a microphotography laboratory with facilities for reproducing printed and other material. On the same floor are the manuscripts reading room and storage area. The first floor has periodical, graduate, and undergraduate reading rooms, the latter opening into an attractively furnished small library for recreational reading. In the north wing is the rare book reading room, with adjoining special collections rooms and storage stacks. The second floor houses the general reference and reading room, the circulation department and Main Loan Desk, and the Public Card Catalog, a union catalog of books in all the University libraries. There is also a catalog of the library of the University of North Carolina at Chapel Hill, whose books are available through inter-library loan.

On the East Campus, the Woman's College Library, in its attractive Georgian building, contains 108,752 volumes in an open stack collection, chiefly those most constantly needed in the undergraduate work of women students. A reference and general reading room, the Thomas Memorial Room, and the Booklovers' Room with open shelves of books for general reading, provide comfortable and attractive space for reading and study.

A "Student's Guide to the General Library" is available on request addressed to the Librarian of the University.

Reserve Officers Training Corps



THROUGH the Naval and Air Force Reserve Officers Training program the University is cooperating with the Department of Defense in the effort to provide a steady supply of well-educated officers for the active and reserve forces of the Nation.

The Bureau of Testing and Guidance



THE UNIVERSITY maintains a Bureau of Testing and Guidance which provides a centralized program of educational, vocational, and personal counseling for students. In addition, the Bureau administers special group testing programs for University schools and departments and serves as the local testing center for a wide variety of national testing programs. The Bureau also carries on programs of research in the field of measurement and counseling. Although the counseling, testing, and research services of the Bureau are designed primarily to meet the needs of the students, the faculty, and the staff of Duke University, these services are made available to individuals and organizations outside the University as its facilities permit. Requests for further information should be addressed to the Director, Bureau of Testing and Guidance, Duke University, Durham, N. C.

Appointments Office



THE APPOINTMENTS OFFICE is a service agency designed to aid graduates in solving the problem of post-college employment. Its primary function is to serve as an intermediary between students and prospective employers. It acquaints students with possibilities in business and professional fields; it assembles comprehensive records on each registrant and makes these records available to appropriate representatives; and it arranges interviews with prospective employers. The data assembled for individual records include academic achievement, training, experience, extracurricular activities, and honors. On occasion additional information of a specialized nature is secured. Confidential letters of recommendation are incorporated in the file of each registrant. The Office initiates contacts for students or cooperates with students who make contacts through personal efforts or through various departments of the University. It aids the registrant in directing his search to a field appropriate to his aptitude, training, and interest.

There are two major divisions of the Office: the Commercial Division, which handles all matters involving contacts with business and professional areas not related to formal education; and the Educational Division, which concerns itself with teaching and school administration positions at all levels. Students and alumni may register with either or both of these divisions.

The Office receives more calls for qualified personnel than it can supply from its registrants. It is to the mutual advantage of the students and the Office that a complete record of registrants be assembled by the fall of the senior year.

The Summer Session



THE SUMMER SESSION at Duke University makes available to Duke undergraduate students and to undergraduates from other universities and colleges a notable program of instruction in many fields of knowledge both academic and professional.

Undergraduates in Duke University who desire to accelerate their programs may complete the work for a degree in three years by attending two and one-half summer sessions.

Undergraduates from other colleges and universities may enjoy the special advantages of summer instruction at Duke and transfer their earned credits to their own institutions.

The Summer Session of 1957, will include two terms: Term I, June 11 to July 17; Term II, July 19 to August 24. By attending both terms it is possible for a student to earn as many as twelve semester hours of credit.

Instruction of interest to undergraduates will be offered in the summer of 1957 in the following departments and colleges: Botany, Chemistry; Economics; Education; Nursing Education; Engineering; English; Forestry; French; Geology; German; Greek; Health and Physical Education; History; Latin and Roman Studies; Mathematics; Philosophy; Physics; Political Science; Psychology; Religion; Sociology; Spanish; and Zoology.

Distinctive features of Summer Session instruction are provided by the program in marine biology offered at the Duke Marine Laboratory, Beaufort, North Carolina, and by various conferences in several of the Departments.

While the basic purpose of the Summer Session is to serve the academic and the professional requirements of those who are interested in their own educational advancement, the University recognizes the need of, and provides for, a varied recreation program both athletic and social.

Undergraduates of Duke University both men and women who plan to attend the Summer Session should enroll with the Dean of their own college in Duke University. Undergraduates in other universities or colleges who seek transfer credits should apply directly to the Director of the Summer Session, Duke University, Durham, North Carolina.

Registration and Academic Regulations



ORIENTATION PROGRAM: All freshmen and transfer students are required to participate in the activities of Orientation Week. The program includes general ability, achievement, and placement tests, orientation lectures, physical examinations, social events, special religious services, registration, and class enrollment.

The University considers the planning of a course of study to be of primary importance. Perhaps the most significant moments of Orientation Week, therefore, are those which a new student spends with his faculty adviser. With the results of the several tests which all freshmen take available to them, the adviser and the student plan a course of study adapted to the ability, achievements, and goals of the individual student. New students who miss the whole or a part of the Orientation Program place themselves at a serious disadvantage at the very outset of their college career.

ENROLLMENT AND REGISTRATION: Students in residence are required to submit to the appropriate dean, not later than the date of the spring registration, cards showing their selection of courses for the following year. An advance deposit of \$25.00 is required before the card may be submitted. These cards, approved by the dean, are filed for permanent record in the Central Records Office. Students who do not select their courses for the following year at the time appointed must be readmitted to the college by application to the Director of Admissions. Students whose course cards have been approved in the spring may enroll by mail during the summer. The same regulations, with the exception of the advance deposit, apply to registration for the spring semester.

Students who register in either semester at a date later than that prescribed in the calendar of the Bulletin must pay to the Treasurer a fee of \$5.00. They are counted as absent in the work they have missed in the courses to which they are admitted, and these absences carry the same penalty as do other absences from the course. Changes in courses for reasons not arising within the University require a payment of \$1.00 for each change made. No course may be elected later than one week after the opening of the semester, and no student may be admitted to any class without an official enrollment.

General Academic Regulations

QUANTITY CREDIT AND COURSE LOAD: The term of credit used is the semester hour which signifies one recitation a week throughout the semester. Two or three hours of laboratory work are equivalent to one hour of class work. Two semesters of seventeen weeks each constitute the academic year. For the degree of Bachelor of Arts or Bachelor of Science, credit for 124 semester hours is required; for a degree in Engineering, 148 semester hours.

The normal load of an undergraduate student in the Colleges of Arts and Sciences is five academic courses totaling 14 to 17 semester hours exclusive of physical education. The maximum number permitted is 19 semester hours, exclusive of physical education. In the College of Engineering the normal load is 17 to 19 semester hours exclusive of physical education. No student is permitted to take less than 14 semester hours of work without special permission from the dean or to take more than the normal load of work unless his average grade in the preceding semester is higher than C.

QUALITY CREDIT: The requirements for the degree are computed in semester hours and in quality points. Quality points are determined by grades as follows: for an A, four quality points for each semester hour; for a B, three quality points for each semester hour; for a C, two quality points for each semester hour; for a D, one quality point for each semester hour; for an F, no quality points. Credit for at least 248 quality points is required for the degree of Bachelor of Arts or Bachelor of Science, and at least 296 quality points for a degree in Engineering.

REQUIREMENTS FOR CONTINUATION IN COLLEGE AND FOR GRADUATION FROM COLLEGE: To continue in college and to graduate, students must, in addition to the requirements listed elsewhere in this Bulletin, pass a minimum number of semester hours, achieve a specified quality point ratio, and in the case of graduation earn a minimum number of quality points. The quality point ratio is calculated by dividing the accumulated number of quality points earned by the accumulated number of semester hours carried (not semester hours passed). These requirements are listed in the following table:

For continuation from	The minimum requirement is
The first to the second year	18 s.h. credit and a q.p.r. of 1.2
The second to the third year	42 s.h. credit and a q.p.r. of 1.4
The third to the fourth year	66 s.h. credit and a q.p.r. of 1.6
The fourth to the fifth year, if needed	90 s.h. credit and a q.p.r. of 1.75
For graduation from	The minimum requirement is
Trinity and the Woman's College	124 s.h., 248 q.p. and a q.p.r. of 1.9
The College of Engineering	148 s.h., 296 q.p. and a q.p.r. of 1.9

Students of the senior class, irrespective of their average grade in preceding years, must, in order to be eligible for graduation, complete the work of their senior year with a minimum average grade of C. In the case of engineers the C average requirement applies not only to all courses taken in their last year but also to work specified for the senior year in their particular engineering curriculum.

The minimum standards for continuation in the College of Engineering are the same as those listed above but since the semester hour requirement for graduation in engineering exceeds the requirement of the liberal arts colleges the standards may be adjusted to meet the special requirement of the college. Moreover, application of these standards is based on the courses required in the engineering curriculum.

In addition to the qualitative standards listed above students must pass a minimum number of hours each semester. Freshmen must pass at least 6 semester hours of work in their first semester and 18 semester hours in their first year; second semester freshmen and all other students must pass at least 9 semester hours each semester. The University may require a student whose record is considered unsatisfactory to withdraw, although he has met the minimum requirements set forth in this paragraph.

Reports on proficiency in academic work are sent to parents or guardians after the examinations at the end of each semester. In addition, reports on freshmen are mailed at each mid-semester period.

CLASS STANDING: In the Colleges of Arts and Sciences students to rank as sophomores must have to their credit at least 26 semester hours and 52 quality points; as juniors, at least 56 semester hours and 112 quality points; and as seniors, at least 90 semester hours and a quality point ratio of 1.75. In the College of Engineering to be classified as a sophomore they must have to their credit at least 30 semester hours and 60 quality points and must have passed certain specially designated courses of the freshman engineering curriculum; to be classified as a junior they must have at least 68 semester hours and 136 quality points and must have passed certain specially designated courses of the sophomore departmental engineering curriculum; and to be classified as a senior they must have at least 106 semester hours and a quality point ratio of 1.75 and must have passed certain specially designated courses of the junior departmental engineering curriculum.

In the Colleges of Arts and Sciences seniors may not take for graduation credit any course open primarily to freshmen; and juniors may not take for graduation credit more than one course open primarily to freshmen. A list of these courses is published in this Bulletin under "Courses of Instruction." With the consent of the department, how-

ever, majors in mathematics, the natural sciences, and science education may as juniors or seniors enroll for credit in the introductory courses in the natural sciences and mathematics.

Seniors who at the beginning of a semester lack no more than 9 semester hours for the fulfillment of the requirements for the A.B. or B.S. degree, may with the approval of the Dean of the Graduate School, enroll in graduate courses for a maximum total program of fifteen hours a week.

A tentative list of all candidates for the Bachelor's degree is prepared under the supervision of the dean as early in the college year as possible. A copy is furnished to each department of instruction for information and reference, and a copy is posted on the official bulletin board of the University for the information of the students concerned.

RESIDENCE REQUIREMENTS: A minimum of 30 semester hours of senior-level work in the Colleges of Arts and Sciences and 36 in the College of Engineering must be earned in residence. Students who meet this requirement but who still lack 6 to 8 semester hours in final fulfillment of requirements may take this work in another institution of approved standing, provided the course is approved by the head of the department concerned and by the dean.

Students who complete in a summer session the work required by the University for the Bachelor's degree will be granted the degree at the end of the summer.

GRADING, ATTENDANCE, AND EXAMINATIONS:

GRADING: Final grades are reported to indicate passing or failing work in designated courses. Final grades are:

(1) *Passing.* Passing grades are A, exceptional; B, superior; C, average; and D, inferior.

(2) *Failing.* A grade of F indicates that the student has failed the course and that in order to receive credit for the course he must repeat the work in class.

Special symbols are used to indicate the following:

(1) *Absence from the final examination.* In all cases in which the student is absent from a final examination, he receives an X in place of a final grade. If he does not present an acceptable explanation for his absence to the appropriate dean's office within forty-eight hours after the scheduled time for the examination, the X is converted to an F. A student absent from examination, if the absence has been excused by the dean, may receive an examination upon payment of a fee of \$5.00 to the Treasurer of the University. The instructor concerned arranges for examination in cases where absences are excused. An X must be cleared by the end of the semester following the examination missed.

(2) *Incomplete work.* If because of illness or other emergency a student's work in a course is incomplete, he may receive an I for the course instead of a final grade. Incomplete courses must be completed before the close of the succeeding semester; otherwise, the I is recorded as F and the course must be repeated in class if the student is to receive credit for it. In case a student whose work is incomplete is also absent from a final examination, he receives an X for the course.

(3) *Withdrawal.* The letter W is used to indicate official withdrawal from a course. If a student drops a course without permission from the dean, the grade for that course is recorded as F. If he drops with permission a course in which he is failing, the grade for that course is recorded as F unless, in the judgment of the dean, circumstances do not justify this penalty.

ATTENDANCE: Regular and punctual attendance in class work is expected of all students. Weekly reports of all absences, irrespective of class standing, are made by each instructor and filed in the dean's office. No instructor has the authority to excuse a student from class attendance; it is his duty to report all absences and tardies.

The requirements for continuation in college and for graduation from college emphasize the desirability of assumption by the student of responsibility for class attendance. Controls are exercised, therefore, during the first two years of college residence. Thereafter, full responsibility is placed on the student.

(1) *Regulations applicable during the first two years of college residence:* One unexcused absence per semester hour without penalty is allowed for personal obligations. Sophomores who in a normal schedule make averages of B or above in the preceding semester will be allowed two absences per semester hour for personal obligations, but will in all other respects be subject to the same regulations as other students.

The first three tardies in a given course are counted as one absence. Thereafter, each additional tardy is counted as one additional absence.

Absences due to illness when certified by a proper medical official will be excused. Absences due to authorized representation of the University may be excused. Officials in charge of groups representing the University are required to submit names of those persons to be excused to the appropriate dean's office forty-eight hours in advance of the hour when their absences are to commence. Absences due to individual and personal reasons will not be excused.

All absences immediately before and after announced holidays are counted as regular absences, and they result in a loss of two quality points for each absence in each class. Unexcused, consecutive absences, whether excessive or not, result in the loss of quality points as in the case of unexcused, excessive absences. Each excessive or consecutive absence results in the loss of quality points as follows: one

quality point for the first absence, two additional for the second, and three additional for the third. When the third unexcused, excessive or consecutive absence occurs, the student is debarred from the course with a loss of six quality points and an F in the course. When the student has incurred twelve absences, excused and unexcused, in any course he is required to drop the course unless the instructor and the dean concerned grant special permission for him to continue in the course.

When a student's course load is reduced, on account of excessive absences, to less than 12 semester hours, he is required to withdraw from the University.

(2) *Regulations applicable after two years of college residence:* Responsibility for punctual and regular attendance is placed on juniors and seniors. However, for absences before and after announced holidays two quality points are deducted for each absence in each class. Instructors are expected to refer to the dean for appropriate action any student who in their opinion is causing his work or that of the class to suffer by virtue of absences or tardies.

EXAMINATIONS: Final examinations are held in all subjects in January and May.

DEFICIENCIES IN COMPOSITION: The following regulations have been adopted by the Faculty:

1. Any student who must take English 1 and whose score in the English placement test indicates that he is not yet ready for English 1 must earn a passing grade in English L before being permitted to enter English 1.

2. In the fall of the junior year every student of Trinity College and of the Woman's College must take an examination in English usage with the following exceptions: (a) students exempted from English 1 and (b) students who earned grades of at least B and C in English 1-2. The regulation does not apply to students of the College of Engineering, which has special course requirements in English composition in addition to English 1-2. Students with irregular schedules resulting from acceleration or transfer to Duke after the fall of their junior year should take the examination in the fall of the year most nearly approximating the fifth semester. In any event, all students with the exceptions noted above must take this examination; it is a requirement for graduation. Any student desiring to postpone his examination must have permission in writing from the Dean. If it is not taken in the junior year, it must be taken during the succeeding fall, or at such other time as may be designated by the appropriate authorities of the University. Students who are proved deficient by this examination will be required to complete satisfactorily a special non-credit laboratory course in remedial English.

3. Whenever the work of a student in any course is unsatisfactory because of errors in English, the instructor may report the student to the dean, who will require him to enroll in remedial English until, in the opinion of the director of the Remedial Laboratory, the deficiency is removed.

4. All instructors are requested to advise their students each semester concerning this regulation.

Requirements for Degrees



DUKE UNIVERSITY offers in Trinity College, the Woman's College, and the College of Engineering, courses of study which lead to the degrees of: Bachelor of Arts; Bachelor of Science; Bachelor of Science in Civil, Electrical, or Mechanical Engineering; and Bachelor of Science in Nursing Education.

Bachelor of Arts

The requirements for the degree of Bachelor of Arts are based on the principle that the student will derive the maximum benefit from his college work if his program includes a broad distribution of studies among representative fields of culture, concentration within a special field, and some work of his own choice.

For graduation with the degree of Bachelor of Arts, the following course work must be completed in accordance with the academic regulations as stated in this Bulletin.

UNIFORM COURSE REQUIREMENTS		S.H.
English		6
Foreign Language		6-18
Natural Science		11
Religion		6
Social Science and History		12
Literature, Music, Art, and Philosophy		6
Physical Education		4
MAJOR AND RELATED WORK		42
ELECTIVES TO MAKE A TOTAL OF		124

These requirements are described in detail below. Descriptions of courses can be found under "Courses of Instruction, Trinity College and the Woman's College."

ENGLISH, 6 s.h.—This requirement is met by the completion of English 1-2. Students who demonstrate proficiency in English usage may be allowed to substitute 55 or 56 for English 1.

FOREIGN LANGUAGE, 6 to 18 s.h.—This requirement is met by the completion of the third college year of a foreign language. The languages which meet this requirement are French, German, Greek, Latin, and Spanish. The number of courses required depends on previous training and ability as shown on placement tests. Students presenting for entrance four units of Latin may satisfy the language requirement by the completion of the third college year of Latin or by two years of Greek. In exceptional cases, on the recommendation of the language department concerned and with the approval of the dean, a student who has completed the second college year of one language may satisfy the requirement by the completion of the first year of another language.

NATURAL SCIENCE, 11 s.h.—To satisfy this requirement a student must complete a laboratory course (8 s.h.) in one of the natural sciences (botany, chemistry, geology, physics, zoology), and one course of at least 3 semester hours selected from mathematics (except Mathematics 1), logic and scientific methodology (Philosophy 48, 103 and 104), or from the sciences listed above.

RELIGION, 6 s.h.—To meet this requirement 6 semester hours must be chosen from Religion 1, 2, 51, 52, 91, 94, 101, 103, 104, 114, 130, 132, 135, 181, 182.

SOCIAL SCIENCE AND HISTORY, 12 s.h.—To satisfy this requirement a student must complete 12 semester hours from the following basic courses: Economics 51-52; Education 84; History 1-2, or 51-52; Political Science 11-12, or 61-62; Psychology 91 to be followed if desired, by either Psychology 100 or 101; or Sociology 91-92. Six of the 12 semester hours must be taken in economics, history, political science, or sociology. Students who do not present for entrance two acceptable units of history must take History 1-2 or 51-52.

LITERATURE, MUSIC, ART, AND PHILOSOPHY, 6 s.h.—This requirement can be satisfied by a total of 6 semester hours in courses in English or American literature, foreign literature courses numbered above 100, literature courses in translation, courses in aesthetics, art, and music, and courses in Philosophy except 48, 101, 103, 104, and 109.

PHYSICAL EDUCATION, 4 s.h.—Physical education is required during each of the first two years and is normally completed by the end of the sophomore year.

MAJOR AND RELATED WORK, 42 s.h.—Prior to registration in the spring of his sophomore year, each student is required to choose his major field and confer with his departmental adviser about the requirements for major and related work.

The major work consists of 18 to 24 semester hours in one department above the introductory courses. Introductory courses may consist of two one-semester courses in all departments except the Departments of German, Latin, and Romance Languages where the introductory courses may consist of four one-semester courses. The choice of courses must be approved by the major department. The related work must be taken in at least two other departments and is selected subject to the approval of the major department and the dean; it may not include more than one course of 6 or 8 semester hours open primarily to freshmen. With the consent of the department, however, majors in mathematics, the natural sciences, and science education may include as related work introductory courses in mathematics and the natural sciences. Courses satisfying the uniform course requirements may also be counted toward the requirements in major and related work. Information on specific departmental requirements for major and related work can be found at the end of the department offerings in the section "Courses of Instruction." Several programs of study designed as preparation for professions are given in the section below entitled "Choice of a Major Field."

The total amount of work that a student may take in any one department toward the Bachelor of Arts degree is limited to a maximum of 36 semester hours. In the Department of Aesthetics, Art, and Music, and the Department of Philosophy, the Department of English, the Department of Economics, Accounting and Business Administration, and the Department of Romance Languages, a total of 54 semester hours is permitted, however, provided a total of not more than 36 semester hours is taken in any one division of the department.

ELECTIVES.—In addition to the uniform courses required and the major and related work, other courses must be completed to make a total of at least 124 semester hours, including 4 semester hours of physical education.

Students whose courses of study permit may elect a maximum of 18 semester hours in engineering, forestry, or medical science. The courses elected in these subjects must be approved by the major department and the dean of the college.

CHOICE OF A MAJOR FIELD

The requirement of 42 semester hours distributed, as specified above, between a major field and related work is based primarily on the belief that some advanced study in one subject, together with work in allied subjects, is a valuable part of a general education. The selection of a major field usually depends on a student's cultural or vocational interests.

GENERAL PROGRAM

The General Program is designed for the student whose primary interest is in one of the liberal arts subjects. The subjects in which major work is offered are: art, botany, chemistry, economics, education, English, French, geology, German, Greek, history, Latin, mathematics, music, philosophy, physics, political science, psychology, religion, sociology, Spanish, zoology.

SPECIALIZED PROGRAMS

The student who has chosen a vocation may wish to include specialized training in his program. The following programs of study in preparation for various professions or professional schools are outlined for the guidance of the student.

BUSINESS: The student who plans to enter business may elect, in addition to the uniform course requirements, the following courses to satisfy the requirements for the Bachelor of Arts degree.

Freshman Year: Economics 11 (recommended but not required).
Mathematics 5 (recommended but not required).

Sophomore Year: Economics 51-52, Economics 57-58.

Junior Year: Economics 105, Economics 138, Economics 143, Economics 168, Economics 181, and one course selected from the following: Economics 144, Economics 147, Economics 158, Economics 182.

Senior Year: Economics 153, Economics 188, Economics 191, and one course selected from the Economics group numbered above 100.

ACCOUNTING: A student who plans to qualify to take the Certified Public Accountant's examination should elect the following courses of study:

Freshman Year: Economics 57-58 (may be taken at this time with the permission of the department).

Sophomore Year: Mathematics 5 and 16 (recommended but not required).
Economics 51-52, Economics 171-172.

Junior Year: Economics 143, Economics 153, Economics 173-174, Economics 181, 182.

Senior Year: Economics 144 or Economics 184, Economics 275-276, and two courses from the following: Economics 175-176, Economics 177, Economics 178, Economics 180.

A student who does not take Economics 57-58 in the Freshman Year must take the course in the Sophomore Year and must make the necessary adjustments in the sequence of subsequent accounting courses.

Students majoring in accounting are urged to familiarize themselves with the educational requirements of the State in which they expect to practice.

RELIGIOUS WORK: A student who plans to enter the ministry or other religious work should have a broad liberal arts training. He may major in religion or any other subject. It is suggested that the student include in his program as many as possible of the following courses.

Freshman Year: Religion 1-2, History 1-2.

Sophomore Year: Religion (6 s.h.), Economics 51-52 or Political Science 61-62, English Literature (6 s.h.).

Junior Year: Religion (6 s.h.), Psychology 91, English 151-152.

Senior Year: Religion (6 s.h.), Sociology (6 s.h.), Philosophy (6 s.h.).

SOCIAL WORK: The student who plans to pursue professional studies in preparation for social work (such as family welfare, child welfare, public welfare, probation and parole, and similar forms of neighborhood and community work) should take his major work in sociology, with related work in other social sciences. The following courses should be included:

History 1-2, or 51-52.

Economics 51-52.

Political Science 61-62.

Psychology 91.

Philosophy (6 s.h.).

Zoology is recommended for the required course in Natural Science. Electives should be chosen mainly from history, economics, political science, education, sociology, philosophy, psychology, or religion.

TEACHING: The program for students who intend to teach is designed to prepare for positions both in the elementary school and in the high school. All prospective teachers, regardless of the type of school in which they expect to teach, (a) must take a sequence of four basic courses in the Department of Education, namely, Education 84, 88, 103, and 118; (b) should read carefully the certification requirements of the state in which they plan to teach and should arrange their programs with their departmental advisers accordingly; and (c) should begin early the required sequence of courses in education, taking Education 84, preferably during the sophomore year and Education 88 during the junior year.

HIGH-SCHOOL TEACHING. Students may meet certification requirements by qualifying in one teaching subject, but they are strongly advised to choose their electives to meet requirements in two teaching subjects. In any case their programs must include courses in education and in other subjects sufficient to satisfy the certification requirements of the state in which they will teach. Courses in materials and methods should be taken during the junior year; and courses in observation and practice teaching may be taken *only* in the senior year.

SCIENCE EDUCATION MAJOR. Students who intend to teach high school sciences may elect to major in Science Education rather than in a department. The program is designed to meet certification requirements and to provide the broad background of training in the sciences which is needed by science teachers. Students planning to enter this program should consult an adviser in the Department of Education and in one of the science departments. The basic requirements are:

Education 103, 118, 215-216, and 276 or 246.

Mathematics 5 and 6.

Sciences (botany, chemistry, geology, physics, zoology)
and mathematics above 6. 36-40 s.h.

1. Courses must be taken in at least two departments.
2. At least 12 s.h. must be taken in courses above the introductory level.

ELEMENTARY SCHOOL TEACHING. Students preparing to teach in the elementary school must complete the following specific requirements: Education 101-102, 142, and 161, History 91-92, and Political Science 11-12, or 61-62, Economics 115, Economics 109, or 118, or 120, Music 151, Physical Education 102, and Health Education 112. Education 101-102 (which includes observation and practice teaching) should be reserved for the senior year.

PREPARATION FOR GRADUATE SCHOOL: The student who plans to enter a graduate school of arts and sciences for advanced study should consult an adviser in the field of the proposed advanced study concerning suitable preparation. Most graduate schools have definite requirements in foreign languages for all students. Candidates for the degree of Doctor of Philosophy are required to pass reading examinations, usually in German and French. In some cases other languages may be substituted. As soon as practicable, the student should ascertain the requirements of the particular graduate school he desires to enter.

PREPARATION FOR LAW SCHOOL: Students who plan to study law may select their major work in any field. The following courses are recommended:

Economics 51-52, 57-58.

English 55-56.

History 1-2 or 51-52, 105-106.

Philosophy 48 and 91.

Political Science 61-62.

Sociology 91-92.

PREPARATION FOR MEDICAL OR DENTAL SCHOOL:

Students planning to enter a medical or dental school should plan their programs of study from the first semester so as to include those courses required by the Medical Schools of their choice. Foundation courses for the study of medicine usually include: Chemistry 1-2, 61, 151-152; English 55-56; Mathematics 5, 6; Physics, 41-42; and Zoology 1-2, 53.

Special advisers are available for pre-medical and pre-dental students. The names of these advisers may be secured at the dean's office.

Bachelor of Science

For graduation with the degree of Bachelor of Science, the following course work must be completed in accordance with the academic regulations as stated in this Bulletin.

UNIFORM COURSE REQUIREMENTS	S.H.
English	6
French and German (second college year)	12-24
Mathematics	6
Natural Science	8
Economics, History, or Political Science	6
Religion	6
Restricted Elective	6
Physical Education	4
MAJOR AND RELATED WORK	48
ELECTIVES TO MAKE A TOTAL OF	124

These requirements are described below. Description of courses can be found under "Courses of Instruction, Trinity College and the Woman's College."

ENGLISH, 6 s.h.—This requirement is met by the completion of English 1 and 2. Students who demonstrate proficiency in English usage may be allowed to substitute English 55 or 56 for English I.

FRENCH AND GERMAN.—Bachelor of Science candidates must normally complete at least the second college year, or equivalent as determined by examination, of both French and German. In special cases, with the permission of the major department and the dean, this requirement may be met by the completion of the third year of French or German. On recommendation of the major department and approval of the dean another language may be substituted for French or German.

MATHEMATICS, 6 s.h.—This requirement may be met by completion of Mathematics 5 and 6.

NATURAL SCIENCE, 8 s.h.—This requirement can be satisfied by courses in one of the natural sciences, namely, botany, chemistry, geology, physics, and zoology. The courses must include laboratory work, and may not be counted as part of the major or related work.

SOCIAL SCIENCE AND HISTORY, 6 s.h.—A student who does not present for entrance two acceptable units of history (exclusive of other social studies) must take a course in history; otherwise, he has his choice of economics, history, or political science.

RELIGION, 6 s.h.—To meet this requirement 6 semester hours must be chosen from Religion 1, 2, 51, 52, 91, 94, 101, 103, 104, 114, 130, 132, 135, 181, 182.

RESTRICTED ELECTIVE, 6 s.h.—To meet this requirement 6 semester hours in addition to other uniform course requirements must be selected from aesthetics, art, economics, education, English, foreign language, history, music, philosophy, political science, religion, and sociology.

MAJOR AND RELATED WORK, 48 s.h.—Major and related work consists of 48 semester hours in the Natural Sciences. This work must be selected from the departments of botany, chemistry, geology, mathematics, physics, psychology, and zoology. The major work consists of not less than 24 semester hours in one department, the choice of courses being subject to the approval of the department. The major work does not include courses primarily open to freshmen. The related work is taken in at least two other departments and is selected subject to the approval of the major department. With the consent of the department majors in mathematics and the natural sciences may include as related work introductory courses in mathematics, the natural sciences, and science education. A minimum of 14 semester hours of related work is required, 8 hours of which must be in laboratory science. Further information concerning the requirements for the major and related work in the various departments will be found at the end of the department offerings in the section "Courses of Instruction."

ELECTIVES.—In addition to the above, the student must elect sufficient courses to complete, with a quality point ratio of 1.9 the 124 semester hours necessary for graduation.

Students whose courses of study permit may elect a maximum of 18 semester hours in engineering, forestry, or medical science. The courses elected in these subjects must be approved by the major department and the dean of the college.

The total amount of work that a student may take in any one department toward the Bachelor of Science degree is limited to a maximum of 40 semester hours.

On or before the date announced for the spring registration, every sophomore in this group should select his major department in the Natural Sciences and arrange, under the guidance of an adviser in the major department, his program of studies for the following year. He should obtain the adviser's written approval of all courses selected in the division before submitting his program to the dean for final action. In like manner, each upperclassman will recheck the courses in his division of concentration each year with a representative of his major department.

Bachelor of Science in Civil, Electrical, or Mechanical Engineering

The College of Engineering offers fully accredited four-year programs in civil, electrical, and mechanical engineering leading to the degrees of B.S. in C.E., B.S. in E.E., and B.S. in M.E.

To facilitate and encourage the combining of a maximum of liberal arts studies with professional training, the College of Engineering has developed a special plan of cooperation with approved liberal arts colleges. Under this "three-two" plan, an outstanding student may follow an approved program of study at the cooperating liberal arts college for an initial period of three years and then come to Duke University to complete his studies at the College of Engineering in two more years. At the end of the total period of five years, a degree is granted by the cooperating liberal arts college, and a degree of Bachelor of Science in the appropriate branch of Engineering by the College of Engineering. Inquiries concerning this plan should be addressed to the Dean, College of Engineering, Duke University, Durham, North Carolina.

GROUPS OF STUDIES FOR THE DEGREE OF BACHELOR OF SCIENCE IN CIVIL, ELECTRICAL, OR MECHANICAL ENGINEERING

See the *Bulletin of the College of Engineering* for courses substituted by Air Force ROTC and Naval ROTC students in the following curricula:

Uniform Freshman Year

FIRST SEMESTER			S.H.	SECOND SEMESTER			S.H.
Engrg	1	Engineering Drawing....	2	Engrg	2	Descriptive Geometry....	2
Engl	1	English Composition....	3	Engl	2	English Composition....	3
Hist	E1	U. S. in World Today....	3	Hist	E2	U. S. in World Today....	3
Math	5	College Algebra.....	3	*Math	50	Analytic Geometry.....	3
Math	6	Trigonometry.....	3	*Math	51	Calculus I.....	3
Phys	41	General Physics.....	4	Phys	42	General Physics.....	4
PE		Physical Education.....	1	PE		Physical Education.....	1
			19				19

GROUP ONE

CIVIL ENGINEERING

Sophomore Year

FIRST SEMESTER			S.H.	SECOND SEMESTER			S.H.
Chem	1	Gen. Inorg. Chemistry...	4	Chem	2	Gen. Inorg. Chemistry...	4
CE	51	CE Fundamentals.....	1	CE	62	Surveying II.....	2
*CE	61	Surveying I.....	4	Econ		52 or Political Science...	3
Econ		51 or Political Science...	3	Engl	E93	Written and Oral Comm...	3
Engrg	57	Statics.....	3	*Engrg	107	Strength of Materials...	3
Math	52	Calculus II.....	3	Math	53	Calculus III.....	3
PE		Physical Education.....	1	PE		Physical Education.....	1
			19				19

Junior Year

FIRST SEMESTER			S.H.	SECOND SEMESTER			S.H.
CE	113	Route Surveying.....	2	CE	118	Engineering Materials...	2
*CE	131	Structural Mechanics I...	3	CE	135	Soils Mechanics.....	3
EE	123	Electric Circuits.....	4	CE	140	Structural Mechanics II..	3
Engrg	58	Dynamics.....	3	Engrg	109	Materials Laboratory...	1
		†Electives.....	6	*Engrg	128	Hydraulics.....	3
			18			†Electives.....	6
							18

Senior Year

FIRST SEMESTER			S.H.	SECOND SEMESTER			S.H.
CE	123	Hydraulic Engineering...	3	CE	116	Transportation Engrg...	3
CE	132	Steel and Timber.....	4	CE	124	Sanitary Engineering...	3
CE	137	Seminar.....	1	CE	133	Reinforced Concrete....	4
ME	103	Thermodynamics.....	3	CE	146	Professional Engineering..	2
ME	115	Mech. Engrg. Laboratory..	1			†Electives.....	6
		†Electives.....	6				18
			18				

*Courses which must be passed before engineering academic standing can be advanced.

†Part of a planned program of electives with minimums of nine semester hours required in the humanities and social sciences of all students and nine semester hours required in mathematics, sciences, or technical subjects of students not taking military science.

GROUP TWO
ELECTRICAL ENGINEERING
Sophomore Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
Chem	1	Gen. Inorg. Chemistry... 4	Chem	2	Gen. Inorg. Chemistry... 4
EE	51	E. E. Orientation..... 1	*EE	52	E. E. Principles I..... 4
EE	71	Instrumentation..... 1	Engl	E93	Written and Oral Comm.. 3
Engrg	57	Statics..... 3	Math	53	Calculus III..... 3
Engl	151	Public Speaking 3	ME	52	Kinetics-Mechanism..... 4
Math	52	Calculus II..... 3	PE		Physical Education..... 1
Phys	75	Modern Physics 3			
PE		Physical Education..... 1			
		19			19

Junior Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
Econ	51	Prin. of Economics..... 3	Econ	52	Prin. of Economics..... 3
EE	101	E. E. Principles II..... 3	*EE	102	E. E. Principles III..... 3
EE	107	E. E. Prin. Laboratory... 1	EE	108	E. E. Prin. Laboratory... 1
Engrg	107	Strength of Materials... 3	EE	106	Intro. to Electronics.... 3
Engrg	109	Materials Laboratory... 1	EE	114	Electronics Laboratory... 1
Math	111	Math. Analysis for Engrs. 3	ME	104	Applied Thermodynamics 3
ME	103	Applied Thermodynamics 3	ME	105	Fluid Mechanics..... 3
ME	115	M. E. Laboratory..... 1	ME	116	M. E. Laboratory..... 1
		18			18

Senior Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
EE	163	Elec. Mach. Laboratory.. 1	EE	164	Elec. Mach. Laboratory.. 1
EE	165	E. E. Seminar..... 1	EE	166	E. E. Seminar..... 1
EE	167	Adv. Electron. Lab..... 1	EE	168	Adv. Electron. Lab..... 1
EE	257	Electric Machinery I.... 3	EE	258	Electric Machinery II.... 3
EE	261	Adv. Electron. Networks I 3	EE	262	Adv. Electron.
EE		Approved EE Elective... 3			Networks II..... 3
		†Approved Elective..... 6	EE		Approved E. E. Elective.. 3
		18			†Approved Elective..... 6
					18

*Courses which must be passed before academic standing can be advanced.

†It is recommended that at least 6 semester hours of the approved electives of the senior year be taken in liberal arts. Each student must carry a carefully planned approved program of electives, designed to meet a particular objective.

GROUP THREE
MECHANICAL ENGINEERING
Sophomore Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
Chem 1	Gen. Inorg. Chemistry...	4	Chem 2	Gen. Inorg. Chemistry...	4
Econ 51	Princ. of Economics.....	3	Econ 52	Princ. of Economics.....	3
Engrg 57	Statics.....	3	Engrg 107	Strength of Materials....	3
Math 52	Calculus II.....	3	Engrg 109	Materials Laboratory....	1
Engl E93	Written and Oral Comm. 3		*ME 52	Kinematics, Kinetics....	4
PE	Physical Education.....	1	Math 53	Calculus III.....	3
		—	PE	Physical Education.....	1
		18			—
					18

Junior Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
EE 123	Electric Circuits.....	4	EE 124	Electric Machinery.....	4
ME 101	Thermodynamics.....	3	*ME 102	Thermodynamics.....	3
ME 105	Fluid Mechanics.....	3	*ME 106	Heat Transfer.....	3
ME 107	Materials and Processes..	3	ME 114	Mech. Eng. Laboratory..	1
ME 113	Mech. Eng. Laboratory..	1	*ME 151	Machine Design.....	5
ME 150	Machine Design.....	2		Elective.....	3
	Elective.....	3			—
		—			19
		19			

Senior Year

FIRST SEMESTER			SECOND SEMESTER		
		S.H.			S.H.
Math 111	Math. Analysis for Engrs.	3	ME 154	Refrigeration.....	3½
ME 153	Heating, Air Conditioning	3½	ME 158	Industrial Engineering..	3
ME 155	Int. Combustion Engines.	3	ME 160	Mech. Eng. Laboratory	2
ME 159	Mech. Eng. Laboratory..	1	ME 162	Power Plants.....	3
ME 171	Instrumentation.....	2	ME 163	Advanced Mechanics..	3
ME 173	Seminar.....	2	ME 174	Seminar.....	1
	Elective.....	3		Elective.....	3
		—			—
		17½			18½

*Courses which must be passed before engineering academic standing can be advanced.

Bachelor of Science in Nursing Education

The requirements for the degree of Bachelor of Science in Nursing Education are designed to prepare qualified graduate nurses for administrative, teaching, and supervisory positions in schools of nursing and in nursing service agencies.

To be eligible for admission to Duke University as a candidate for this degree a student must meet the following requirements:

1. Graduation from an approved secondary school with at least fifteen acceptable units of credit. (See specific requirements for admission to Trinity College and the Woman's College.)

2. Graduation from an approved school of nursing which provides satisfactory preparation in medical, surgical, pediatric, and obstetric nursing, as a minimum (psychiatric nursing is desirable).

3. Satisfactory scores on specified tests.

4. Supervisory ratings from three individuals, preferably former teachers and supervisors with whom the individual has had fairly recent contact.

Credit for 120 semester hours (exclusive of physical education) with a quality point ratio of 1.9 is required for the degree of Bachelor of Science in Nursing Education. The work of the final year must be taken in residence at Duke University. The program of studies leading to this degree must include:

	S.H.
1. MINIMUM GENERAL EDUCATION REQUIREMENTS.....	38-50
May be taken at Duke University or at any accredited college or university.	
English 1-2	6
*Natural science	8
History (1-2 or 51-52)	}
Economics (51-52)	
Political Science (61-62)	
Sociology (91-92 or 101)	3-6
Psychology (91, 100 or 101)	3-6
†Electives	12-18
2. BASIC NURSING PROGRAM.....	maximum 40
May be taken at the Duke School of Nursing or at any approved school of nursing. The amount of credit which is granted for the nursing school program is determined on an individual basis.	
3. COURSES IN EDUCATION AND NURSING EDUCATION.....	3
88 Psychological Foundation of Modern Education.....	3
118 Educational Psychology—Psychological Development.....	3
160N Social Foundations of Nursing Education.....	3
101N The Curriculum of the School of Nursing.....	3
115-116N Nursing Education: Principles and Practices.....	8
117 Community Nursing Service—Seminar in Field Trips to Community Agencies	3
4. FIELD OF CONCENTRATION.....	15
Fifteen semester hours in one field, such as chemistry, physics, psychology, sociology, zoology, or in a clinical area in conjunction with related subjects. No freshman work may be included in these 15 semester hours.	
5. PROFESSIONAL EXPERIENCE	
One year of experience as a graduate nurse is required before the degree is awarded.	

* Botany 1-2, Chemistry 1-2, Geology 51-52, Physics 1-2, Zoology 1-2.

† Literature, art, music, religion, ethics, and language are suggested.

Academic-Professional Courses

The provision whereby a senior may elect the work of the first year in a professional school of the University shall apply solely to eligible students in Trinity College or the Woman's College. The privilege of completing a combined course for the degree is conditioned upon admission to the professional school at the close of the junior year. A student thus admitted registers as a senior in the College and as a first-year student in the professional school.

ACADEMIC-FORESTRY COMBINATION

A student who has completed the program of study given below with an average grade of C or higher in accordance with the academic regulations as stated in this Bulletin may, with the approval of the Dean of the College and the Admissions Committee of the School of Forestry, transfer to the School of Forestry. Upon the satisfactory completion of the work of the first year in the School of Forestry the student may become eligible for the degree of Bachelor of Science from Trinity College, Duke University. This provision shall apply solely to eligible undergraduates who have completed three years in residence at Duke University.

Students wishing information concerning admission to the School of Forestry are invited to consult with the dean of that school. Completion of the first three years of work necessary to qualify for the Academic-Forestry Combination does not insure admission to the Duke University School of Forestry, nor impose any restriction upon the School's freedom in selecting students for admission. The professional degree of Master of Forestry may be obtained upon the satisfactory completion of the work of the second year in the School of Forestry.

The program of studies in preparation for admission to the School of Forestry under the combination program includes the following work:

UNIFORM COURSE REQUIREMENTS

	S.H.
Uniform Course Requirements for the B.S. Degree	48-66
Additional Required Courses	24-26
Electives to Make a Total of	94
Summer Field Work	13

These requirements are described in the Requirements for the Bachelor of Science degree in this Bulletin. Spanish may be substituted for French in the foreign language requirement. The natural science requirement is met by completion of Botany 1-2. The economics, history, or political science requirement is met by completion of Economics 51-52. The student who does not present for entrance two acceptable units in history must meet the restricted elective requirement by completion of 6 semester hours in history.

ADDITIONAL REQUIRED COURSES.—The additional required courses are as follows:

	S.H.
Chemistry 1-2	8
Engineering Drawing 1-2	4
Geology 51	4
Physics 1-2	8
	<hr/> 24

ELECTIVES.—The electives are normally chosen from botany, chemistry, economics, mathematics and philosophy. A minimum of 94 semester hours must be

obtained, exclusive of summer field work, to meet uniform course requirements, additional required courses, and electives.

SUMMER FIELD WORK.—This work of 13 weeks, preferably to be taken upon completion of the junior year, includes:

	S.H.
Civil Engineering S110. Plane Surveying	4
Forestry S149. Forest-tree Identification.....	1
Forestry S150. Forest Surveying and Aerial Photo Interpretation	4
Forestry S151. Forest Mensuration	4
	<hr/> 13

Students in this combination should have their programs approved by the special adviser for students in the Academic-Forestry Combination. The name of this adviser may be obtained at the dean's office.

ACADEMIC-LAW COMBINATION

A student who has completed with an average grade of C or higher, 96 semester hours of undergraduate work, including the uniform course requirements for the degree of Bachelor of Arts and the work of the junior year in his major and related fields, may, with the approval of the dean of the College, transfer to the Duke University School of Law and be eligible for the degree of Bachelor of Arts from Duke University upon the satisfactory completion therein of the work of the first year.

It is understood that this provision shall apply solely to eligible undergraduates who have completed three years in residence in Duke University, and that not less than the full first-year's work of the Law School will be acceptable for credit towards the bachelor degree.

No single discipline or program of study can be described as the best preparation for the study of law since there are various methods of approach to legal study.

Completion of the undergraduate work necessary to qualify for the Academic-Law Combination does not insure admission to the Duke University School of Law, nor impose any restriction whatever upon its freedom in selecting students for admission. Students wishing further information are invited to consult with the Dean of the School of Law.

Courses of Instruction

Trinity College and the Woman's College



NOTE: Courses primarily for freshmen are numbered from 1 to 49; those primarily for sophomores are numbered from 50 to 99; those primarily for juniors and seniors from 100 to 199; those primarily for seniors and graduates from 200 to 299. The amount of credit for each course is given in semester hours following the description of the course.

The designation (w) or (e) indicates that the course is to be given on the West Campus or on the East Campus. Odd-numbered courses are offered in the fall semester, and even-numbered courses are offered in the spring semester. Double numbers separated by a hyphen indicate that the course is a year-course and must normally be continued throughout the year if credit is received. A student must secure written permission from the instructor in order to receive credit for either semester of a year-course. Double numbers separated by a comma indicate that although the course is a year-course credit may be received for either semester without special permission.

COURSES OPEN PRIMARILY TO FRESHMEN

Air Science 1-2

Art 1-2, 1L-2L

Botany 1, 2

Chemistry 1-2

Economics 11

Education 1, 5

English 1-2

French 1-2, 3-4

German 1-2, 3-4

Greek 1-2, 15

Health Education 41

History 1, 2, El-2

Latin 1-2, 3, 4

Mathematics 1, 5, 6, 16

Music 1-2, 11-12, 47-48

Naval Science 101, 102

Philosophy 48, 49

Physical Education 1, 2

Physics 1-2, 41-42

Political Science 11-12

Religion 1, 2

Spanish 1-2, 3-4

Zoology 1, 2

AESTHETICS, ART, AND MUSIC

PROFESSOR RANSOM R. PATRICK, CHAIRMAN; ASSOCIATE PROFESSOR EARL G. MUELLER, DIRECTOR OF UNDERGRADUATE STUDIES IN ART; ASSOCIATE PROFESSOR HALL, SUPERVISOR OF FRESHMAN INSTRUCTION IN ART; ASSOCIATE PROFESSOR JULIA W. MUELLER, DIRECTOR OF UNDERGRADUATE STUDIES IN MUSIC; ASSOCIATE PROFESSOR BONE, SUPERVISOR OF FRESHMAN INSTRUCTION IN MUSIC; ASSOCIATE PROFESSORS JENKINS, MARKMAN, AND SUNDERLAND; ASSISTANT PROFESSORS BRYAN, HANKS, KLENZ, SAVILLE, AND WITHERS; MISS PRIOLETTI, MESSRS. BRODERSON AND STARS

AESTHETICS

121. THE PRINCIPLES OF ART CRITICISM.—The development of criteria for making sound critical judgments based on analyses of painting, sculpture, architecture, and design. 3 s.h. (e)

PROFESSOR PATRICK

FOR SENIORS AND GRADUATES

202. **PHILOSOPHY OF ART.**—A study of some fundamental issues in aesthetics, with particular reference to the fields of literature, music, and painting. Problems discussed include: the nature and purposes of the arts; meaning in the arts; art and morality; the role of standards in art criticism; aesthetic judgment; interpretation and evaluation. 3 s.h. (E) ASSISTANT PROFESSOR WELSH

221-222. **HISTORY OF AESTHETICS.**—Theories of art and beauty in the western world from antiquity to the present. Some attention will be given the developed theories of aesthetics in the Far East. (Formerly 213-214) 6 s.h. (E)

PROFESSOR PATRICK

ART

HISTORY OF ART

1-2. **INTRODUCTION TO ART HISTORY.**—A historical survey of the development of architecture, sculpture, painting, and the minor arts as material manifestations of the culture of the western world from ancient to modern times, with some reference to primitive, Oriental, and other non-western cultures. The visual arts as a record of a whole civilization. The course will provide the student with terminology and principles necessary to formation of judgments. Open only to freshmen; others, see Art 51-52. 6 s.h. (E & W) STAFF

51-52. **INTRODUCTION TO ART HISTORY.**—A historical survey of the development of architecture, sculpture, painting, and the minor arts as material manifestations of the culture of the western world from ancient to modern times, with some reference to primitive, Oriental, and other non-western cultures. The visual arts as a record of a whole civilization. The course will provide the student with terminology and principles necessary to formation of judgments. The aims of this course are identical with those of Art 1-2; the content and method are adapted to the capacities of upperclassmen. Not open to upperclassmen who have received credit for Art 1-2. A senior in his last semester may receive credit for one semester. 6 s.h. (E & W) STAFF

131. **ART OF THE HELLENIC WORLD.**—After a preliminary treatment of the late Aegean the course deals with the development of the major arts of ancient Greece from the geometric period through the Graeco-Roman style and incorporates a survey of vase painting. 3 s.h. (W) ASSOCIATE PROFESSOR MARKMAN

132. **ROMAN ART.**—The course opens with a preliminary survey of Etruscan and early Roman art, then deals with the major and minor arts of the republican period, imperial Rome in Italy and the provinces, to the early Christian style in the East and West. 3 s.h. (W) ASSOCIATE PROFESSOR MARKMAN

133. **MEDIAEVAL ARCHITECTURE.**—A survey of Christian architecture in the Near East, the Balkans, Russia, and western Europe from the beginnings of the mediaeval style in the late classical period to its disintegration in the fifteenth century. (Formerly 101) 3 s.h. (E) ASSOCIATE PROFESSOR SUNDERLAND

134. **MEDIAEVAL PAINTING AND SCULPTURE.**—A study of painting, including mosaics, manuscripts, stained glass, and sculpture, in western Europe from the late classical period through the fourteenth century. (Formerly 102) 3 s.h. (E) ASSOCIATE PROFESSOR SUNDERLAND

135. **RENAISSANCE ARCHITECTURE.**—A study of the early phases of the new style based on design elements taken from ancient Rome which replaced the dying Gothic style in Italy in the fifteenth century and in the rest of western Europe in the sixteenth century. 3 s.h. (E) ASSOCIATE PROFESSOR SUNDERLAND

136. **NORTHERN RENAISSANCE ART.**—A study of book illumination, panel painting, graphic arts, and sculpture as expressions of literary, religious, and philosophical ideas of the fifteenth and sixteenth centuries in the Low Countries, Germany, and France. The formation of the northern realistic tradition in late Gothic Art and the relationship of the North with the Italian Renaissance will be developed in detail. Some emphasis will be placed on individual artists such as the Van Eycks, Van der Weyden, Bouts, Van der Goes, Bosch, Bruegel, Grünewald, and Dürer. (Formerly 125) 3 s.h. (E) ASSOCIATE PROFESSOR E. MUELLER

137. ITALIAN RENAISSANCE PAINTING AND SCULPTURE.—The evolution of art forms in Italy during the fifteenth and sixteenth centuries with emphasis on the art of Florence, Rome, and Venice. (Formerly 123). 3 s.h. (E)

ASSOCIATE PROFESSOR JENKINS

138. EUROPEAN ARCHITECTURE 1550-1750.—A study of the alteration of the High Renaissance ideal by Mannerist and Baroque designers in Italy, and the consequences for the rest of western Europe, especially for absolutist France and parliamentary England. 3 s.h. (E)

ASSOCIATE PROFESSOR HALL

139. THE RISE OF CONTEMPORARY ARCHITECTURE.—A study of the sources and evolution of the architecture of today, from the eighteenth century conflict between Romantic Historicism and Industrialism to the work of Gropius, LeCorbusier, Wright, and their successors. (Formerly 105) 3 s.h. (E)

ASSOCIATE PROFESSOR HALL

140. BAROQUE PAINTING AND SCULPTURE.—The styles of the seventeenth and eighteenth centuries in European countries as examples of the international culture of the period. (Formerly 126). 3 s.h. (E)

ASSOCIATE PROFESSOR JENKINS

141. AMERICAN ART.—A survey of architecture, sculpture, and painting in America from the time of the first settlers to the present day, including a consideration of the contributions of the English, Dutch, French, and Spanish to the artistic heritage of the United States. (Formerly 94) 3 s.h. (E)

ASSOCIATE PROFESSOR SUNDERLAND

142. MODERN PAINTING AND SCULPTURE.—The development of European painting and sculpture from the period of the French Revolution to the present. Introduction to parallel and contemporary trends in the United States. (Formerly 129 and 130) 3 s.h. (E)

PROFESSOR PATRICK

143. THE HISTORY OF PRINTS AND DRAWINGS.—A historical and critical study of drawings and prints from the fifteenth century to the present with reference to functions, values, and relationships to other forms such as painting, sculpture, and the book. (Formerly 133) 3 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER

FOR SENIORS AND GRADUATES

215. RELIGIOUS ART OF THE ANCIENT NEAR EAST.—A specialized study of the development of art, particularly architecture and sculpture, as the material expression of religious ideas in Egypt, Mesopotamia, and in part of Syria and Palestine, to the Persian conquest. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

216. RELIGIOUS ART OF THE CLASSICAL WORLD.—A specialized study of the religious art, particularly architecture and sculpture, of Greece and Rome, with special emphasis on the monuments in the Near East. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

217. AEGEAN ART.—A study of the problems of Aegean art as the forerunner of Greek art and in relation to the contemporary civilization of the eastern Mediterranean world. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

218. EARLY GREEK ART.—A study of the problems of the origin and development of Greek art in the Geometric period to the end of the Archaic. 3 s.h. (w)

ASSOCIATE PROFESSOR MARKMAN

233. EARLY MEDIAEVAL ARCHITECTURE.—The development of religious architecture from the time of Constantine to the end of the First Romanesque style in the third quarter of the eleventh century. 3 s.h. (E)

ASSOCIATE PROFESSOR SUNDERLAND

234. ROMANESQUE SCULPTURE.—The development of sculpture in western Europe from the early Christian period through the culmination of Romanesque art in the west portal of Chartres Cathedral. 3 s.h. (E)

ASSOCIATE PROFESSOR SUNDERLAND

240. ARCHITECTURE OF NORTH AMERICA.—A study illustrating the transplantation of European architectural customs since the sixteenth century; the time-

lag in transit and acceptance of later European developments; the gradual assumption of confident independence in design; and the emergence of international leaders in the United States. (Formerly 106) 3 s.h. (E) ASSOCIATE PROFESSOR HALL

DESIGN

Students other than art majors may receive not more than eight semester hours credit for work in studio courses. For any number of semester hours of credit in studio courses an equal number of hours must be taken in History and Criticism. The introductory courses 1L-2L or 51L-52L are prerequisite for all courses in Design.

1L-2L. DESIGN LABORATORY.—This course aims to develop the student's visual faculty through practice with design elements and experience with media. Freshmen intending to elect further courses in Art are advised to carry this course concurrently with Art 1-2. Open only to freshmen enrolled in Art 1-2; others, see Art 51L-52L. 2 s.h. (E) ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

51L-52L. DESIGN LABORATORY.—The aims, content, and method of this course are similar to those of Art 1L-2L. Upperclassmen intending to elect further courses in Art are advised to carry this course concurrently with Art 51-52. Open only to upperclassmen enrolled in Art 51-52, and to those who have completed Art 1-2 or 51-52 without electing Design Laboratory. A senior in his last semester may receive credit for one semester. 2 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

53-54. BEGINNING STUDIO.—A studio course offering experiment and practice with formal elements of composition in various media. Particular emphasis will be given to drawing; watercolor, collage, and three-dimensional media will be secondarily considered. 4 s.h. (E) ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

55, 56. PAINTING.—A studio course designed to give experience in painting media with individual and group criticism, and discussion of important historic or contemporary ideas in painting as related to student work. Prerequisite: Art 53-54 or consent of the instructor. 4 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

157, 158. ADVANCED PAINTING.—Emphasis is given to the techniques of various painting and design media. Prerequisite: 55, 56. 4 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

159, 160. PRINTMAKING.—This course presupposes a knowledge of design and skill in drawing. Practice in wood engraving; block printing; and in copperplate engraving, etching, aquatint, and drypoint. Reference will be made to prints in relation to the design of the book, and historic examples of the art of the print will be analyzed in the study of these techniques. Prerequisite: 53-54. 4 s.h. (E)

ASSOCIATE PROFESSOR E. MUELLER; MR. BRODERSON

DEPARTMENTAL MAJOR IN ART

Prerequisite: Introduction to Art History (1-2 or 51-52); or, with the approval of the Director of Undergraduate Studies, equivalent hours in 100 level courses which form a background for the History of Art.

Major Requirements: The student will select in consultation with the departmental adviser a sequence of courses emphasizing either the History of Art or Design.

a. History of Art: 24 semester hours which must include courses at the 100 level distributed over the entire field of Art History, and a concentration of courses in at least two areas.

b. Design: 22 semester hours, of which 16 must be in Design and 6 from courses in the History of Art and Theory.

Related Work: 18 hours which must include work in the field of Aesthetics and Criticism (Aesthetics 121, 221-222); 9 hours in two other departments should be elected from courses in History, English, German, Romance Languages, Greek, Latin and Roman Studies, History of Music, Philosophy, Sociology, Anthropology, Psychology, and the History of Religion.

MUSIC

Courses in music are offered both for the general student who wishes to acquire knowledge of music as literature and on a more technical level for those prepared to major in the field. The courses marked * are open to general students without prerequisites.

THEORY

*11-12. THEORY I.—The elements of harmony, rhythm, and form; the visual and aural recognition of scales, intervals, triads, and seventh chords, and their functions in relation to the system of tonality; harmonization of melodies; development of rhythmic discrimination. Designed for those students who wish to pursue a more technical study of music. Three lectures and two laboratory hours. Open only to freshmen. 8 s.h. (E) STAFF

*61-62. THEORY I.—An amplification of Music 11-12. Open to upperclassmen who have not had Music 11-12. 8 s.h. (E) STAFF

73-74. THEORY II.—A continuation of Music 11-12, plus analysis and composition of the smaller forms; further development of proficiency in harmonization; continuation of aural training; introductory study of counterpoint. Prerequisite: Music 11-12 or 61-62. 6 s.h. (E) ASSISTANT PROFESSORS BRYAN AND KLENZ

117-118. THEORY III.—A continuation of Music 73-74. Emphasis upon development of technical and expressive means and stylistic treatment by practical work in composition, and analysis and observation of larger forms; further study of counterpoint. The completion of an original large form composition for chamber group, chorus, or orchestra. Prerequisites: Music 11-12 or 61-62, and 73-74. 4 s.h. (E)

ASSISTANT PROFESSOR KLENZ

121. CONDUCTING.—The conducting of orchestral and vocal scores. Score-reading and analysis, principles of interpretation, establishment of vocal and instrumental conductorial techniques leading to practical experience in conducting the department musical organizations in rehearsal. Prerequisites: Music 11-12 or 61-62, and 73, or consent of the instructor. 3 s.h. (E) ASSOCIATE PROFESSOR BONE

122. ORCHESTRATION.—A study of the technical characteristics and transpositions of the instruments of the modern symphony orchestra and concert band. Instrumentation of piano scores or original compositions for string, woodwind, brass ensembles, and for full symphony orchestra or concert band. Prerequisites: Music 11-12 or 61-62, and 73, or consent of the instructor. 3 s.h. (E) ASSOCIATE PROFESSOR BONE

HISTORY AND CRITICISM

*1-2. INTRODUCTION TO MUSIC.—Rhythm, melody, harmony, form, instruments of the orchestra, development of listening technique, and critical appreciation. Study of the lives and works of great representative composers from 1700 to the present. Open only to freshmen; others, see Music 51-52. 6 s.h. (E)

ASSOCIATE PROFESSOR BONE; ASSISTANT PROFESSORS HANKS AND WITHERS

*51-52. INTRODUCTION TO MUSIC.—Rhythm, melody, harmony, form, instruments of the orchestra, development of listening technique, and critical appreciation. Study of the lives and works of great representative composers from 1700 to the present. The aims of this course are identical with those of Music 1-2; the content and method are adapted to the capacities of upperclassmen. Open only to upperclassmen who have not completed Music 1-2. 6 s.h. (E & W) STAFF

*133. ORCHESTRAL LITERATURE.—A study of orchestral suites, overtures, concerti, symphonies, and symphonic poems selected from literature of the eighteenth century to the present. (Not offered in 1956-57). 3 s.h. (E)

ASSOCIATE PROFESSOR BONE

*134. CHORAL LITERATURE.—A study of representative oratorios, cantatas, and masses from Bach to Stravinsky; aesthetic and religious implications of sacred choral composition and performance from the Baroque to the present. 3 s.h. (E)

ASSISTANT PROFESSOR SAVILLE

135. PIANO LITERATURE.—A comprehensive survey of the great works for keyboard instruments, from the time of the English virginal composers to the present. Prerequisites: Music 47A, 48A, 97A, and 98A, or consent of the instructor. 3 s.h. (E) ASSISTANT PROFESSOR WITHERS

136. SOLO SONG LITERATURE.—A study of standard recital repertoire; early Italian and English songs, German lieder, the French and English art song. Open to junior and senior Applied Voice majors. 3 s.h. (E) ASSISTANT PROFESSOR HANKS

137. CHAMBER MUSIC.—A study of form, style, and interpretation of masterpieces of chamber music. Prerequisites: Music 1-2 or 51-52, or 11-12 or 61-62, or consent of the instructor. 3 s.h. (E) ASSOCIATE PROFESSOR J. MUELLER

138. CONTEMPORARY MUSIC.—A critical survey of contemporary stylistic trends and theory in the light of their twentieth-century background. Prerequisites: Music 1-2 or 51-52, or 11-12 or 61-62, or consent of the instructor. 3 s.h. (E) ASSISTANT PROFESSOR KLENZ

147-148. HISTORY OF MUSIC.—The history of the development of music as a manifestation of Western culture from mediaeval to modern times. The rise of Christianity through the Renaissance, first semester; the Baroque to the present, second semester. Prerequisite: Music 1-2 or 11-12 or 61-62, or consent of the instructor. 6 s.h. (E) ASSISTANT PROFESSORS KLENZ AND SAVILLE

Formerly 95-96 and 145-146. 147 not open to students who have had 145-146. 148 not open to students who have had 95-96.

*164. MUSIC IN THE NINETEENTH CENTURY.—A study of the music of the nineteenth century, from Beethoven to Debussy, with attention to artistic and literary influences, and the relations among the creative minds of the time. Individual projects. 3 s.h. (E) ASSOCIATE PROFESSOR J. MUELLER

*165. OPERA LITERATURE.—A study of opera from Handel to Berg; aesthetic and cultural implications of opera from the Baroque to the present. 3 s.h. (E) ASSISTANT PROFESSOR SAVILLE

195-196. COLLEGIUM MUSICUM.—Studies in the integration of music history, theory, and performance. Survey of sources, monuments, and bibliographical techniques. Preparation for performance of representative musical literature through analysis, realization of notations, and stylistic reconstruction. Classroom discussion and reports; also laboratory. Designed for music majors in history or theory and open to others by consent of the instructor. 4 s.h. Laboratory may be taken separately under Applied Music, Medium F. (E) ASSISTANT PROFESSOR KLENZ

MUSIC EDUCATION

57-58. VOCAL DICTION.—Problems of diction as specifically applied to the art of singing. Required of all Applied Voice majors. 2 s.h. (E) ASSISTANT PROFESSOR HANKS

106. PIANO METHODS AND MATERIALS.—A study of the materials and methods of piano pedagogy. The appropriate choice of essential and supplementary literature. Development of technique, style, and musicianship. Supervised practice teaching. Prerequisites: Music 47A, 48A, 97A, and 98A, or consent of the instructor. 3 s.h. (E) ASSISTANT PROFESSOR WITHERS

107. VOCAL PEDAGOGY.—The problems of private vocal teaching. A detailed study of the function of the vocal mechanism and of the psychological factors in teaching. Open to junior and senior Applied Voice majors, and others with the consent of the instructor. 3 s.h. (E) ASSISTANT PROFESSOR HANKS

151. PUBLIC SCHOOL MUSIC EDUCATION.—For Elementary Education majors. Development of the child through participation in and understanding of music. Child voice and song; rhythmic activity; discriminative listening; music-reading; use of elementary instruments such as auto-harp, psaltery, and the rhythm band instruments. Music as a creative art in its own right and as an adjunct to other studies in the elementary school. 3 s.h. (E) ASSISTANT PROFESSOR SAVILLE

APPLIED MUSIC

The study of Applied Music concerns the use and understanding of technics of performance in relation to the standard literature of each medium or ensemble group. Instruction is offered in the following media: A. Piano; B. Strings; C. Woodwinds; D. Brass; E. Voice; F. Ensemble—Piano, Instrumental, Vocal, and the Departmental Ensembles listed below. Instruction in media A through E may be private or in classes limited to a minimum of 4 and a maximum of 7 students. Class instruction is restricted to the first 4 grades of proficiency. Class instruction shall be designated by adding the letter X to the appropriate medium and year-in-school classification. (Example: junior year, Woodwinds, class instruction is recorded 147CX.)

Students who wish to enroll in Applied Music courses *must* consult with the appropriate faculty member *before* registering for a course.

47A, 48A; 97A, 98A; 147A, 148A; 197A, 198A. PIANO.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSISTANT PROFESSOR WITHERS; MISS PROIETTI

47B, 48B; 97B, 98B; 147B, 148B; 197B, 198B.—VIOLIN, VIOLA, 'CELLO.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSOCIATE PROFESSOR J. MUELLER; ASSISTANT PROFESSOR KLENZ

47C, 48C; 97C, 98C; 147C, 148C; 197C, 198C. WOODWINDS.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSOCIATE PROFESSOR BONE

47D, 48D; 97D, 98D; 147D, 148D; 197D, 198D.—BRASS.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSISTANT PROFESSOR BRYAN

47E, 48E; 97E, 98E; 147E, 148E; 197E, 198E. VOICE.—For freshmen, sophomores, juniors, seniors. 2 s.h. (E) ASSISTANT PROFESSOR HANKS

47F, 48F; 97F, 98F; 147F, 148F; 197F, 198F. ENSEMBLE.—For freshmen, sophomores, juniors, seniors. Prerequisite: consent of the instructor. 1 s.h. (E) STAFF

Credits: Credit for Media A through E is granted on the basis of 2 s.h. per semester for one period of private study and a minimum of 6 hours practice per week; 1 s.h. per semester for one period of class study and a minimum of 6 hours practice per week.

Credit for instruction in Medium F is granted on the basis of 1 s.h. per semester for one period of instruction per week and a minimum of 6 hours practice per week. No additional fee required.

For any number of hours in Applied Music an equal number of hours must be taken in Music Theory or in Music History and Criticism. Students other than Music Majors may receive not more than 8 s.h. credit for work in Applied Music.

Music Majors may take a minimum of 6 s.h. and a maximum of 18 s.h. in Applied Music according to the following areas of concentration:

Majors in Music Theory or in Music History and Criticism must earn 6 s.h. credit in Applied Music. (Credit may be reckoned from Grade I.)

Majors in Applied Music may earn a maximum of 18 s.h. credit in Applied Music.

Majors in Music Education who expect to teach music in the public schools should plan their academic programs in close consultation with the Director of Undergraduate Studies in Music. The credit hours in Applied Music required for certification are, in most states, in excess of the maximum number of hours allowable for satisfaction of the Bachelor of Arts degree at Duke University. The detailed program of courses is available through the office of the Chairman of the Department.

Fees per semester: Fees are charged for Applied Music Media, A, B, C, D, E, and for practice facilities. They are payable to the Treasurer's Office of Duke University at the beginning of each semester as follows:

One ½ hour private lesson per week for one semester.....	\$45.00
Two ½ hour private lessons per week or one 1-hour private lesson per week for one semester.....	80.00
One 1-hour class lesson per week for one semester.....	20.00

Three hours use of cubicle with piano per week for one semester (Theory and Voice Class students).....	7.50
Six hours' use of cubicle with piano per week for one semester (Piano and private Voice students).....	15.00
Six hours use of cubicle without piano per week for one semester	10.00

DEPARTMENTAL ENSEMBLES

Brass Ensemble	Madrigal Singers
Chamber Orchestra	Piano Ensemble
Collegium Musicum	Vocal Ensemble

DEPARTMENTAL ORGANIZATIONS

Duke University Concert Band
Duke University Symphony Orchestra

DEPARTMENTAL MAJOR IN MUSIC

Prerequisite: Music 11-12 or 61-62.

Major Requirements: 24 s.h. including 6 s.h. in Applied Music. The major student shall select, in consultation with his departmental adviser, a sequence of Music courses emphasizing (a) theory, or (b) history and criticism, or (c) education, or (d) the use and understanding of a particular medium.

AIR SCIENCE

PROFESSOR TODD, COLONEL, USAF, CHAIRMAN; ASSISTANT PROFESSOR BARNHILL, MAJOR, USAF, DIRECTOR OF UNDERGRADUATE STUDIES; INSTRUCTOR CANFIELD, CAPTAIN, USAF, SUPERVISOR OF FRESHMAN INSTRUCTION; INSTRUCTORS ENGLISH, CAPTAIN, USAF, AND KNOX, CAPTAIN, USAF

ELIGIBILITY REQUIREMENTS.—All physically qualified freshmen who are citizens of the United States and are enrolled in Trinity College or the College of Engineering are eligible to enroll in the Air Force ROTC. Veterans may be exempted from the freshman and sophomore courses under certain conditions. In special cases where permission has been granted, certain qualified students from the Graduate and Professional Schools may be enrolled.

DEPOSIT REQUIRED.—Each student must make a deposit of twenty dollars with the University Treasurer to insure return of all government property.

AIR FORCE ROTC COURSES.—All students pursue the same generalized courses. No flying training is included in the college program. All specialized training will be given when the individual enters the Air Force.

The courses are established by the United States Air Force and are approved by the College as electives for all undergraduates. Field or laboratory instruction in leadership, drill, and exercise of command is included as a part of all courses to indoctrinate the student in the fundamental principles of command.

BASIC COURSES

The following courses are required of students in the Air Force Reserve Officers Training Corps, as outlined in the various curricula:

AS 1-2. FIRST YEAR BASIC AIR SCIENCE.—This course introduces the student to the AFROTC Program and the Field of Aviation. The fundamentals of global geography are studied in relationship to international tensions and the resulting formation of security organizations. The course concludes with an analysis of the instruments of National Military Security. 4 s.h. (w) CAPTAIN CANFIELD

AS 51-52. SECOND YEAR BASIC AIR SCIENCE.—Stress is laid upon the elements and potentials of air power including targets, weapons, aircraft, air oceans, air bases, and Air Force operations. A survey is made of the careers open to personnel in the Air Force. 4 s.h. (w) CAPTAIN ENGLISH

ADVANCED COURSES

All students selected to continue in Air Science pursue:

AS 101-102. FIRST YEAR ADVANCED AIR SCIENCE.—The first semester is concerned with the Air Force commander and his staff; techniques of problem solving; communications processes and Air Force correspondence; instructing in the Air Force. The second half of the course deals with military law, courts and boards and applied air science including problems of modern flight, navigation, and weather. Attention is also given to the functions of an Air Force base. Prerequisites: AS 1-2 and 51-52 or equivalent. 8 s.h. (w) CAPTAIN KNOX

AS 201-202. SECOND YEAR ADVANCED AIR SCIENCE: The first semester includes career guidance, seminar studies in the principles of leadership and management in the Air Force and military aviation and the evolution of warfare. The second semester is concerned with the military aspects of world political geography and concludes with a briefing for commissioned service. Prerequisites: AS 1-2 and 51-2 or equivalent, and AS 101-102. 8 s.h. (w) MAJOR BARNHILL

BIOLOGY

See courses listed under Botany and Zoology.

BOTANY

PROFESSOR OOSTING, CHAIRMAN; PROFESSOR HUMM, DIRECTOR OF UNDERGRADUATE STUDIES; ASSISTANT PROFESSOR PHILPOTT, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS ANDERSON, BLOMQUIST, HARRAR, AND KRAMER; ASSOCIATE PROFESSORS BILLINGS, NAYLOR, AND PERRY; ASSISTANT PROFESSOR JOHNSON; DR. CULBERSON; AND ASSISTANTS

1. GENERAL BOTANY.—An introduction to the structure and life-processes of seed plants and the environmental factors influencing their distribution. Laboratory, discussions, and field trips. Three two-hour periods. 4 s.h. (w & e) STAFF

2. GENERAL BOTANY.—A survey of the plant kingdom with emphasis on reproduction and an introduction to identification. Three two-hour periods. Prerequisite: Botany 1. 4 s.h. (w & e) STAFF

51. CULTURE AND PROPAGATION OF PLANTS.—Experimental studies of the processes involved in growth, and the application of this knowledge to the selection, growth, and propagation of plants. Prerequisite: one year of botany. 4 s.h. (e) DR. CULBERSON

52. PLANT IDENTIFICATION.—Practice in the identification of local plants, especially flowering plants, and a study of the principles and rules underlying plant classification. Laboratory, lectures, and field trips. Prerequisite: one year of botany. 4 s.h. (w) PROFESSOR BLOMQUIST

53. ECOLOGY OF ECONOMIC PLANTS.—The principles of plant growth and distribution as applied to crop plants. Forest, grassland, and representative cultivated species will be considered in relation to environment. Prerequisite: one year of a natural science. 3 s.h. (e) PROFESSOR ANDERSON

55. ANATOMY AND MORPHOLOGY OF VASCULAR PLANTS.—A detailed study of the vegetative and reproductive tissues of seed plants; and a survey of the several groups of vascular plants emphasizing relationships of body structures and life histories. Prerequisite: one year of botany. 4 s.h. (e) ASSISTANT PROFESSOR PHILPOTT

101. PRINCIPLES OF HEREDITY.—The basic principles of heredity and their significance. Lectures, three hours; laboratory, two hours; conference (attendance optional), one hour. Laboratory work includes experimental breeding of the fruit fly. May be taken as a lecture course without laboratory. Prerequisite: one (high-school or college) course in biology, botany, or zoology. High-school or college algebra recommended. 3 or 4 s.h. (w) ASSOCIATE PROFESSOR PERRY

103. GENERAL BACTERIOLOGY.—A study of the morphology and fundamental physiological processes of bacteria; their relationship to sanitation, public health, soil fertility, and food preservation. Prerequisite: one year of botany or zoology, or equivalent. 4 s.h. (w) ASSOCIATE PROFESSOR HUMM

104. THE STRUCTURE AND IDENTIFICATION OF LOWER PLANTS.—A study of representative examples of algae, fungi, mosses and liverworts, including collection, identification, and classification of common forms. Offered in alternate years. Prerequisite: one year of botany. 4 s.h. (w) PROFESSOR ANDERSON

151. INTRODUCTORY PLANT PHYSIOLOGY.—The principal physiological processes of plants, including water relations, synthesis and use of foods, and growth phenomena. Prerequisite: Botany 1, 2 or equivalent; one year of chemistry recommended. 4 s.h. (w) PROFESSOR KRAMER

156. PLANT ECOLOGY.—The principal factors affecting plants and plant communities as they exist in different environments. Laboratory, lectures, and field trips. Prerequisites: Botany 1, 2 and 52, or equivalent. 4 s.h. (e)

ASSOCIATE PROFESSOR BILLINGS

202. GENETICS.—The principles of heredity, their cytological basis, and their bearing on other fields of biology. Laboratory work involves experimental breeding of the fruit fly and interpretation of data from the breeding of plants. Offered in alternate years. Prerequisites: one year of botany or zoology, or equivalent, and college algebra. 4 s.h. (w)

ASSOCIATE PROFESSOR PERRY

203. PLANT CYTOLOGY.—A study of the structure and organization of plant cells in relation to growth, reproduction and especially heredity. Offered in alternate years. Prerequisite: one year of botany. 4 s.h. (w) PROFESSOR ANDERSON

204. ADVANCED PLANT ANATOMY.—A study of vegetative and reproductive tissues of vascular plants including selection and preparation of fresh plant materials. An analysis of some of the significant literature bearing upon function, development and phylogeny. Prerequisite: Botany 55 or equivalent. 4 s.h. (e)

ASSISTANT PROFESSOR PHILPOTT

216. BOTANICAL MICROTECHNIQUE.—Methods and theory in preparation of plant tissues for temporary mounts and permanent microscopical slides. Prerequisite: Two years of natural science. 4 s.h. (e) ASSISTANT PROFESSOR PHILPOTT

218. ILLUSTRATIVE TECHNIQUES.—A study of botanical illustrative methods, including theory and use of the microscope, microscopical measurements, drawing, photomicrography, botanical photography, darkroom procedure, lantern slides and the preparation of illustrative material for publication. Prerequisite: Two semesters of botany, zoology or forestry. 2 s.h. (w)

PROFESSOR ANDERSON

221. INTRODUCTORY MYCOLOGY.—Field and laboratory study of the vegetative and reproductive structures of the fungi and slime molds. Methods of collection, isolation, propagation, and identification of the major orders as represented in the local flora. Prerequisite: One year of biological science. 4 s.h. (w)

ASSISTANT PROFESSOR JOHNSON

225-226. SPECIAL PROBLEMS.—Students with adequate training may do special work in the following fields:

a. MYCOLOGY, AND PLANT PATHOLOGY. ASSISTANT PROFESSOR JOHNSON

b. CYTOLOGY. PROFESSOR ANDERSON

c. ECOLOGY. PROFESSOR OOSTING AND ASSOCIATE PROFESSOR BILLINGS

d. GENETICS. ASSOCIATE PROFESSOR PERRY

e. MORPHOLOGY AND ANATOMY OF HIGHER GROUPS.

ASSISTANT PROFESSOR PHILPOTT

f. MORPHOLOGY AND TAXONOMY OF LOWER GROUPS.

PROFESSORS BLUMQUIST AND ANDERSON; DR. CULBERSON

g. PHYSIOLOGY. PROFESSOR KRAMER AND ASSOCIATE PROFESSOR NAYLOR

i. TAXONOMY OF HIGHER GROUPS. PROFESSOR BLUMQUIST

j. SENIOR SEMINAR.—1 s.h. (w) STAFF

m. MICROBIOLOGY. ASSOCIATE PROFESSOR HUMM

252. PLANT METABOLISM.—The physicochemical processes and conditions underlying the physiological processes of plants. Prerequisite: Botany 151 or equivalent; organic chemistry recommended. 4 s.h. (E) ASSOCIATE PROFESSOR NAYLOR

254. PLANT WATER RELATIONS.—A study of factors affecting the availability of water, its absorption and use in plants, and the effects of water deficits on plant processes. Assigned readings, reports, and lectures. Prerequisite: Botany 151 or equivalent. 3 s.h. (w) PROFESSOR KRAMER

255. ADVANCED TAXONOMY.—A study of the historical background of plant taxonomy, modern concepts and systems of classification, nomenclatorial problems and the taxonomy of specialized groups. Prerequisite: two years of botany, including Botany 52 or equivalent. 4 s.h. (w) PROFESSOR BLOMQUIST

256. COMMUNITY ANALYSIS AND CLASSIFICATION.—The development of concepts and methods in synecology leading to present applications of theory and field techniques. Prerequisite: Botany 156 or equivalent. 3 s.h. (E) PROFESSOR OOSTING

257. PRINCIPLES OF PLANT DISTRIBUTION.—Interpretations of floristic and ecological plant geography of world vegetation. Prerequisite: Botany 156 or equivalent. 3 s.h. (E) ASSOCIATE PROFESSOR BILLINGS

258. PHYSIOLOGY OF GROWTH AND DEVELOPMENT.—Consideration of the internal factors and processes leading to the production of new protoplasm and its differentiation at the cellular, tissue, and organ level in plants. Prerequisite: Botany 151 or equivalent; organic chemistry recommended. 3 s.h. (E) ASSOCIATE PROFESSOR NAYLOR

259. ENVIRONMENTAL MEASUREMENTS.—Methods of obtaining and evaluating climatological data for ecological purposes with special attention to instrumentation and microclimate. Prerequisite: Botany 151 and 156 or equivalent. 3 s.h. (E) ASSOCIATE PROFESSOR BILLINGS

FOREST BOTANY

224. FOREST PATHOLOGY.—Infectious and non-infectious diseases of forest trees, and related deterioration of forest products. Field and laboratory study of symptoms, etiology, and control. Prerequisite: Botany 1 and 2. 3 s.h. (w) ASSISTANT PROFESSOR JOHNSON

253. DENDROLOGY.—Nomenclature, classification, and identification of woody plants with special reference to species indigenous to southeastern United States and other important forest regions of temperate North America. Laboratory and field work. Prerequisite: one year of botany. 3 s.h. (w) PROFESSOR HARRAR

DEPARTMENTAL MAJOR

Prerequisites: Botany 1 and 2.

Major Requirements: A minimum of 21 hours (B.S., 24 hours) of work including courses 52, 55, and 104. The remaining hours may be selected from any other courses in the Department for which the student is eligible, subject to the approval of the Departmental Adviser. All majors are expected to register for Senior Seminar for one semester of their senior year.

Related Work: Courses in at least two Natural Science Departments sufficient to total, with major work, 42 s.h. (B.S., 48 s.h.).

CHEMISTRY

PROFESSOR SAYLOR, CHAIRMAN; ASSISTANT PROFESSOR WILDER, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSOR HILL, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS BIGELOW, BRADSHAW, BROWN, CLOCKER (VISITING LECTURER), GROSS, HAUSER, HOBBS, AND VOSBURGH; ASSISTANT PROFESSORS KRIGBAUM, POIRIER AND STROBEL; DRs. CARPENTER, FERNANDEZ AND QUIN AND ASSISTANTS

1. 2. GENERAL INORGANIC CHEMISTRY.—Lectures and recitations on the elementary principles of chemistry and on the structure, properties, preparation

and uses of the elements and their compounds. The laboratory work includes qualitative analysis of some of the more common metals. One lecture, two recitations, and three laboratory hours, throughout the year. Chemistry I is a prerequisite for Chemistry 2. 8 s.h. (w & e)

PROFESSORS HILL, BRADSHER, AND BROWN; ASSISTANT PROFESSORS KRIGBAUM, STROBEL, AND WILDER; DRs. CARPENTER, FERNANDEZ, AND QUIN AND ASSISTANTS

42. INTRODUCTION TO CHEMICAL ANALYSIS.—A study of solutions of electrolytes with special reference to chemical equilibrium and chemical analysis. Laboratory experiments illustrate the principles of chemical equilibrium and the techniques of quantitative and semimicro qualitative analysis. Credit is not given for both 2 and 42 nor for both 42 and 61. One lecture, one recitation and six laboratory hours. Prerequisites: Permission of the Director of Undergraduate Studies, Chemistry 1, and Mathematics 6; the latter may be taken concurrently. 4 s.h. (w)

ASSISTANT PROFESSORS WILDER AND STROBEL

NOTE: Two *mutually exclusive* chemistry sequences are provided on the freshman-sophomore level, (a) courses 1, 2 and 61 and (b) courses 1, 42, and 65. Courses 42 and 65 are open primarily to well-qualified B.S. science majors. Students interested in them should confer with the Director of Undergraduate Studies in Chemistry. Those selected for Chemistry 42 will ordinarily be expected to continue with 65.

61. FUNDAMENTALS OF ANALYTICAL CHEMISTRY.—A study of the reactions of electrolytes in solution and of chemical equilibrium illustrated by laboratory experiments involving the techniques of gravimetric, volumetric, and colorimetric analysis. One lecture, one recitation, and six laboratory hours. Prerequisites: Chemistry 1, 2 and Mathematics 6 or equivalent. 4 s.h. (w)

PROFESSORS SAYLOR AND VOSBURGH; ASSISTANT PROFESSORS KRIGBAUM, POIRIER, STROBEL, AND WILDER; AND ASSISTANTS

65. INORGANIC CHEMISTRY.—A study of the more familiar elements and their compounds in the light of modern theories of valence and molecular structure. Three recitations a week. Prerequisite: Chemistry 42. 3 s.h. (w)

PROFESSORS VOSBURGH AND HILL

70. QUANTITATIVE ANALYSIS.—A study of the theory and techniques of inorganic gravimetric and volumetric analysis. One lecture, one recitation, and six laboratory hours. Prerequisite: Chemistry 42 or 61. 4 s.h. (w)

PROFESSORS SAYLOR AND VOSBURGH; ASSISTANT PROFESSORS KRIGBAUM, POIRIER, STROBEL, AND WILDER; AND ASSISTANTS

131. ADVANCED QUANTITATIVE ANALYSIS.—A second course in the theory and technique of inorganic analysis with special reference to the analysis of complex materials. One lecture and six laboratory hours. Prerequisite: Chemistry 70. 3 s.h. (w)

PROFESSORS VOSBURGH AND SAYLOR AND ASSISTANTS

151, 152. ORGANIC CHEMISTRY.—An introduction to the study of the compounds of carbon in which the chemistry of aliphatic and aromatic compounds is considered. Laboratory experiments are selected to illustrate the more important reactions and preparations of organic compounds. Two lectures, one recitation, and three laboratory hours. Prerequisite: Chemistry 61 or 65. Chemistry 151 is prerequisite for 152. 8 s.h. (w)

PROFESSORS BIGELOW, BRADSHER, BROWN, AND HAUSER; ASSISTANT PROFESSOR WILDER; AND ASSISTANTS

206. ELEMENTS OF THEORETICAL CHEMISTRY.—A course in the general principles of physical chemistry for students who do not present credit in calculus. Credit is not given for both 206 and 261-262. Three recitation and three laboratory hours. Prerequisites: Chemistry 70, 151, 152, Physics, 8 s.h., and Mathematics, 6 s.h. With the permission of the Director of Graduate Studies, graduate students from other departments may offer other advanced science courses in lieu of some of these prerequisites. 4 s.h. (w)

PROFESSOR SAYLOR

215. **ADVANCED INORGANIC CHEMISTRY.**—A study of modern theories of valence and molecular structure and of inorganic compounds, particularly the less common types. Prerequisites: Chemistry 261-262 or 206. 3 s.h. (w)

PROFESSORS VOSBURGH AND HILL

216. **NUCLEAR CHEMISTRY.**—Types and elementary theory of nuclear reactions and the considerations involved in the use of tracers in chemical studies. Prerequisites: Chemistry 261-262; 262 may be taken concurrently. 2 s.h. (w)

PROFESSOR HILL

233. **INSTRUMENTAL ANALYSIS.**—A study of physical measuring instruments in chemical analysis with special attention to optical instruments. One lecture and three laboratory hours. Prerequisites: Chemistry 70 and one year of physics. 2 s.h. (w)

ASSISTANT PROFESSOR STROBEL

234. **CHEMICAL INSTRUMENTATION.**—Discussion of physicochemical principles as applied to instrumental methods of analysis, illustrated by laboratory experiments with emphasis on methods involving electrical techniques. One lecture and three laboratory hours. Prerequisites: Chemistry 70 and either 261-262 or 206; either of the latter may be taken concurrently. 2 s.h. (w)

ASSISTANT PROFESSOR STROBEL

251. **QUALITATIVE ORGANIC ANALYSIS.**—Systematic identification of organic compounds, including a study of solubilities and classification reactions. One lecture and six laboratory hours. With permission of the Director of Graduate Studies, graduate students may take three hours of laboratory work instead of six and receive 2 semester hours credit. Prerequisites: Chemistry 70, 151, 152. 3 s.h. (w)

PROFESSOR HAUSER

252. **ADVANCED ORGANIC PREPARATIONS.**—A laboratory course designed to supplement the student's knowledge of fundamental organic processes by a selected group of laboratory exercises accompanied by discussions of techniques and theories pertinent to the experiments. Five hours laboratory and lecture with lectures in alternate weeks. Prerequisite: Chemistry 70, 151, 152. 2 s.h. (w)

PROFESSOR BROWN

261-262. **PHYSICAL CHEMISTRY.**—Fundamentals of general theoretical chemistry illustrated by selected laboratory experiments. Three recitations and three laboratory hours. Prerequisites: Chemistry 70, 151, 152; Physics, 8 s.h.; and Mathematics 51, 52 or equivalent. 8 s.h. (w)

PROFESSOR HOBBS

271. **INTRODUCTION TO RESEARCH.**—Lectures on the use of chemical literature, research methods, recording and publication of results, and other topics. One lecture. 1 s.h. (w)

PROFESSOR BROWN

275-276. **RESEARCH.**—The aim of this course is to give instruction in methods used in the investigation of original problems. It is open to seniors by permission of the Director of Undergraduate Studies. Nine hours a week and conferences. 1 to 6 s.h. (w)

PROFESSORS BIGELOW, BRADSHAW, BROWN, GROSS, HAUSER,
HILL, HOBBS, SAYLOR, AND VOSBURGH; ASSISTANT
PROFESSORS KRIGBAUM, STROBEL, AND WILDER

DEPARTMENTAL MAJOR

A. For the degree of A.B.

Prerequisites: Chemistry 1, 2, Mathematics, 6 s.h.

Major Requirements: 22 s.h., including Chemistry 61, 70, 151, 152, and an additional 6 to 8 s.h., which may be satisfied by 261-262 or by 206 together with 2 or 3 s.h. selected from courses 131, 233, 234 and 251.

Related Work: 20 s.h., including Physics 8 s.h. with the remainder usually in Botany, Geology, Mathematics, Physics, or Zoology.

B. For the degree of B.S. beginning Fall, 1957.

Prerequisites: Chemistry 1, 2 or 1, 42, Mathematics 6 s.h.

Major Requirements: Chemistry 61 or 65, 70, 131, 151, 152, 251, 234 or 252, 261-262; also 271, if 65 is elected.

Related Work: 18 s.h., including Physics, 8 s.h., and Mathematics 50, 51, and 52. The language requirements must be satisfied by German and either French or Russian.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

ECONOMICS AND BUSINESS ADMINISTRATION

PROFESSOR HOOVER, CHAIRMAN; ASSOCIATE PROFESSOR SAVILLE, ACTING DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSORS BLACK, DE VYVER, HANNA, HUMPHREY, JOERG, LANDON, RATCHFORD, SIMMONS, SMITH, AND SPENGLER; VISITING PROFESSOR THOMAS; ASSOCIATE PROFESSORS CARTTER, LEMERT, MCKENZIE, AND SHIELDS; ASSISTANT PROFESSORS BELL, DEWEY, AND DICKENS; VISITING ASSISTANT PROFESSOR STEWART; DR. KREPS; MESSRS. DIX, DUKES, GIBBONS, GOFFMAN, GOTTHEIL, HUNTLEY, PARTHEIOS, AND WILL

The courses offered by the Department are listed under three divisions, Economics, Accounting, and Business Administration.

In general, the Economics courses aim to develop in the student such critical and analytical skills as underlie the ability to understand economic problems and institutions, both in their contemporary and in their historical setting. While no particular vocational or professional goal is emphasized, these courses furnish the academic background necessary for many positions in industry, for work in the economic branches of government service, and for graduate study in economics and the social sciences.

Courses in Accounting and Business Administration, although more concerned with general principles than with specific applications, stress in greater measure than courses in Economics the knowledge and techniques useful to students definitely preparing for business careers. The student who majors in Accounting may elect courses in accountancy, business law, and related work, sufficient to qualify for admission to C.P.A. examinations.

Economics 51-52 must be passed by all students planning to elect further courses in Economics and Business Administration.

ECONOMICS

51-52. PRINCIPLES OF ECONOMICS.—6 s.h. (E & W)

STAFF

Sections of Economics 51 will be offered during the spring semester, and sections of Economics 52 will be offered during the fall semester.

103. TRANSPORTATION.—Essential features, problems, and competitive positions of rail, highway, air, and inland-water transportation, with most emphasis on rail transportation. Special attention is given to the economic significance of transportation, and to cost factors, rates and their economic effects and regulations. 3 s.h. (W)

PROFESSOR LANDON

132. THE ECONOMIC HISTORY OF THE UNITED STATES.—A study of the agricultural, industrial, commercial, and financial progress of the United States from colonial times to the present day. 3 s.h. (W)

ASSOCIATE PROFESSOR SAVILLE

149. INTERMEDIATE ECONOMICS.—This course develops methods of economic analysis beyond the principles level. Major emphasis is laid on the determination of price and distribution of income. These problems are studied in the context of both competitive and monopolistic market structures. 3 s.h. (W)

STAFF

150. ECONOMIC THOUGHT SINCE ADAM SMITH.—A course of readings in the leading economic writers of the 19th and 20th Centuries. There will be weekly individual conferences, and occasional essays. Prerequisite: Economics 149 and permission of the department. 3 s.h. (W)

ASSOCIATE PROFESSOR MCKENZIE; STAFF

152. GLOBAL GEOGRAPHY.—The subject matter involves resources patterns and world affairs, geonomic problems, geocultural problems, and geographic factors affecting geopolitical questions. 3 s.h. (E)

ASSOCIATE PROFESSOR LEMERT

153. **MONEY, CREDIT AND BANKING.**—This course begins with a study of the nature, characteristics, and functions of money, credit, and the commercial banking system. It covers also the history of commercial banking in the United States; the foundation, organization, and functions of the Federal Reserve System; the supervision and control of commercial banks; deposit insurance; and the value of money. 3 s.h. (w) PROFESSOR SIMMONS; PROFESSOR RATCHFORD; ASSOCIATE PROFESSOR SAVILLE; ASSISTANT PROFESSOR DEWEY

155. **LABOR PROBLEMS.**—An examination of present-day labor problems followed by an intensive study of methods used by employers and workers in meeting those problems. 3 s.h. (w) PROFESSOR DE VYVER; ASSOCIATE PROFESSOR CARTTER

161. **EUROPEAN ECONOMIC PROBLEMS.**—This course deals with the losses and economic dislocations of the war, the problem of developing a new pattern of intra-European and world trade, the effort to stabilize prices, expand investments and production, and the effect of economic planning and controls. 3 s.h. (w) PROFESSOR HUMPHREY

169. **ECONOMICS OF CONSUMPTION.**—Economic problems of the family. Factors determining choice; commercial and legal standards for consumer's goods; consumer credit and co-operation; income and standards of living. 3 s.h. (w) ASSOCIATE PROFESSOR SAVILLE

186. **LATIN-AMERICAN ECONOMICS.**—Facts and factors in the economic structure and growth of the Latin-American nations; population, labor productivity, and standards of living; problems of industry, agriculture, and mining; transportation and public utilities; monetary and fiscal policies; the migration of capital; economic thought and institutions. 3 s.h. (w) PROFESSOR SMITH

187. **PUBLIC FINANCE.**—This is a general course in the principles of public finance. It covers the constitutional, economic, and administrative aspects of public revenues, public expenditures, public debts, and intergovernmental fiscal relations. Special attention is given to current trends and problems. 3 s.h. (w) PROFESSOR RATCHFORD

189. **BUSINESS AND GOVERNMENT.**—An examination of the public policies which most directly affect the operation of competition in the business world. The course considers the leading philosophies of public control and economic development, the validity of their presuppositions, and their influence on legislation, court decisions, and administrative law. 3 s.h. (w) ASSISTANT PROFESSOR DEWEY

193. **ECONOMIC SYSTEMS.**—A study of alternative economic systems. An historical and analytical study of the basic elements of capitalism and of collectivist types of economic systems. Particular attention is given to an analysis of the economic system of Soviet Russia. Credit for this course will be given only if the student takes Economics 194. Prerequisite: permission of the department. 3 s.h. (w) PROFESSOR HOOVER

[Not offered in 1957-58.]

194. **ECONOMIC FUNCTIONS OF THE STATE.**—A continuation of Economics 193. A consideration of the economic functions of society and of the contrasting roles of the state in the various economic systems in carrying on these functions. The Nazi system, the quasiosocialized economics of Europe, as well as the modifications of old-style capitalism in the United States are analyzed. Prerequisite: Economics 193. 3 s.h. (w) PROFESSOR HOOVER

[Not offered in 1957-58.]

201. **SENIOR SEMINAR IN ECONOMICS.**—Problems in theory and applied economics. Readings, reports, and discussion of selected topics. For majors in Economics, with consent of the Department. 3 s.h. (w) STAFF

217. **POPULATION PROBLEMS AND RESOURCES.**—Survey of population theory and policy. Study of national and international trends in population—growth and resource-use, together with analyses of their economic and social implications. 3 s.h. (w) PROFESSOR SPENGLER

218. **BUSINESS CYCLES.**—A study of the various types of cyclical movements in industry, with special emphasis on cycle theory and methods of controlling or modifying business cycles. 3 s.h. (w) PROFESSOR HUMPHREY

219. ECONOMIC PROBLEMS OF UNDER-DEVELOPED AREAS.—Consideration and analysis of the economic and related problems of under-developed countries. Some attention will be given to national and international programs designed to accelerate the solution of these problems. 3 s.h. (w) PROFESSOR SPENGLER

231. ECONOMIC HISTORY OF EUROPE.—The economic development of Europe from medieval times to the present, treating such topics as the guilds, mercantilism, money, banking, crises, the Industrial Revolution, the interrelationships of government and business, and the economic consequences of war. 3 s.h. (w) PROFESSOR SMITH

237-238. STATISTICAL METHODS.—A study of statistical methods appropriate for dealing with problems in business and the social sciences. In addition to developing more thoroughly the subjects considered in *Business Statistics*, the following methods will be considered: simple, multiple, partial, and curvilinear correlation; curve fitting; probability; sampling distributions; and statistical inference. Prerequisite: Economics 138 or consent of the instructor. Either semester may be taken for credit. 6 s.h. (w) PROFESSOR HANNA

240. NATIONAL INCOME.—A critical survey of the conceptual framework and structure of national income and its components, the reliability of national income estimates, and their use in analyzing questions of economic policy. 3 s.h. (w) PROFESSOR HANNA

243. MATHEMATICAL ECONOMICS.—A systematic survey of mathematical economic theory. The principal topics are conditions of static equilibrium, including stability conditions, dynamic models using difference equations, and linear production models of input-output analysis and activity analysis. 3 s.h. (w) ASSOCIATE PROFESSOR MCKENZIE

244. INTRODUCTION TO ECONOMETRICS.—The theory of statistical model building in economics. The identifiability of parameters in a system of linear difference equations. The statistical estimation of parameters. The design of dynamic economic models. 3 s.h. (w) ASSOCIATE PROFESSOR MCKENZIE

256. LABOR LEGISLATION AND SOCIAL INSURANCE.—A study of the relations of the state to labor problems with special reference to remedial legislation, to interference in labor disputes, and to social insurance. Prerequisite: Economics 155 or with the consent of the instructor. 3 s.h. (w) PROFESSOR DE VYVER

257. DYNAMICS OF THE LABOR MOVEMENT.—A study of the forces which have shaped the growth of the labor movement. Special emphasis on the origin of modern trade unionism, relating its growth with western philosophic developments, and with the changing economic and social structure of society in Europe and America. 3 s.h. (w) ASSOCIATE PROFESSOR CARTTER

262. TRADE UNIONISM AND COLLECTIVE BARGAINING.—An intensive survey of the trade union as an economic institution is followed by a study of the principles and problems of union-management relationship as found in collective bargaining. Prerequisite: Economics 155 or equivalent. 3 s.h. (w) PROFESSOR DE VYVER

265. INTERNATIONAL TRADE AND FINANCE.—A study of the fundamental principles of international trade and foreign exchange. Subjects covered will include international specialization, balance of payments, foreign investments, tariffs and commercial policies, exchange control, exchange rates, and international monetary problems. 3 s.h. (w) PROFESSOR HUMPHREY

268. COMPETITIVE VERSUS MONOPOLISTIC ENTERPRISE.—A study of monopoly and imperfect competition as disturbances of a free, self-regulating market economy in an individualistic democratic political system; of the possibilities of public and private action respecting the preservation of these systems; and of the implications of planning and public welfare policies. 3 s.h. (w) ASSISTANT PROFESSOR DEWEY

ACCOUNTING

57-58. **PRINCIPLES OF ACCOUNTING.**—Principles of single proprietorship, partnership, and corporate accounting. Designed to give the student some insight into accounting techniques and an understanding of financial statements, their preparation and interpretation. Supervised laboratory attendance optional. 6 s.h. (w) **STAFF**

60. **GENERAL ACCOUNTING.**—A one semester course in accounting principles designed for economics majors and other non-business administration students who desire some understanding of basic accounting concepts. This course must be taken in the sophomore or junior year. Students may not receive credit for both Course 60 and Course 57-58. 3 s.h. (w) **ASSISTANT PROFESSOR DICKENS; PROFESSOR DE VYVER**

147. **ACCOUNTING FOR CONTROL.**—This course traces the ways and means of executive control through statistics and industrial accounting. Emphasis is placed upon controlling business enterprises through cost accounting, financial reports, and other techniques. This course is not open to accounting majors. Prerequisite: Economics 57-58. 3 s.h. (w) **PROFESSOR BLACK**

171-172. **ADVANCED ACCOUNTING.**—Advanced accounting theory and practice applied to the managerial problems of valuation and operation in corporations, consolidations, mergers, and liquidations. Open to students who have completed Economics 57-58. 6 s.h. (w) **ASSOCIATE PROFESSOR SHIELDS**

173-174. **AUDITING, THEORY AND PRACTICE.**—This course is primarily concerned with preparing the student to enter public accounting practice, but some attention is given to internal auditing. During the first semester, auditing techniques and methods are studied through the use of an audit practice set. The work of the second semester deals with matters of auditing and accounting policy examined from the standpoints of the supervising accountant, the business manager, and the investor. Prerequisite: Economics 171-172 and the permission of the department. 6 s.h. (w) **ASSISTANT PROFESSOR DICKENS**

175-176. **C.P.A. REVIEW.**—Thorough practice in classroom to prepare candidates for the Certified Public Accountant examination. The object is to train students to apply accounting principles and to work in classroom under substantially the same conditions as in the examination room. Practical accounting problems, auditing analysis and theory of accounts. Prerequisite: Economics 171-172 and permission of the department. 6 s.h. (w) **PROFESSOR BLACK**

Those who do not wish credit may take Economics 175-176 for \$25.00 per semester.

177. **INCOME TAX ACCOUNTING.**—A study of the accounting principles involved in the management of business enterprise under the requirements of Federal income tax laws. Practice is given in the preparation of tax returns. Prerequisite: Economics 171-172 or permission of the instructor. 3 s.h. (w) **ASSOCIATE PROFESSOR SHIELDS**

178. **ACCOUNTING SYSTEMS.**—A presentation of the design and use of basic accounting procedures as applied to specialized business needs. Field trips to selected business units will be arranged. Prerequisite: Economics 171-172 and the permission of the department. 3 s.h. (w) **ASSISTANT PROFESSOR DICKENS**
[Not offered in 1957-58.]

180. **GOVERNMENT ACCOUNTING.**—Accounting principles and methods used in the control and administration of governmental units. Emphasis is placed upon state, county, and municipal governments. Prerequisite: Economics 57-58 and permission of the instructor. 3 s.h. (w) **ASSOCIATE PROFESSOR SHIELDS**

275-276. **ADVANCED INDUSTRIAL ACCOUNTING AND MANAGEMENT.**—A comprehensive examination of the rationale and techniques of control methods used in industry. Emphasis is laid on a critical evaluation of the practices followed by job-order, process, and standard costing as well as the economics of overhead costs. Prerequisites: Economics 171-172 and permission of the Department. 6 s.h. (w) **PROFESSOR BLACK**

BUSINESS ADMINISTRATION

11. ECONOMIC GEOGRAPHY.—A course in regional economic geography embracing the study of the world's major geographic regions, their present and potential production of food and raw materials for manufacture, and the relationship between these factors and the development of manufacturing industries, cities, and commerce. Offered both semesters. 3 s.h. (E & W) ASSOCIATE PROFESSOR LEMERT

105. INDUSTRIAL MANAGEMENT.—This course deals primarily with the elements and problems of managing the operations of an industrial firm. Topics treated include the functions and responsibilities of management, qualities required in executives, organization, location, the physical plant, materials control, the planning and control of operations, industrial and market research, personnel, budgeting, purchasing, and records and reports. Offered both semesters. 3 s.h. (W)

PROFESSOR LONDON, PROFESSOR JOERG;
ASSISTANT PROFESSOR BELL

109. THE ECONOMIC GEOGRAPHY OF LATIN AMERICA.—This course involves comprehensive study of the resources and people of Mexico, the West Indies, and Central and South America. Special emphasis is placed upon the possibilities and limitations of increases in trade between the United States and the leading Latin-American countries. Prerequisite: Economics 51-52 or permission of the department. 3 s.h. (E)

ASSOCIATE PROFESSOR LEMERT

115. FUNDAMENTALS OF GEOGRAPHY.—A study of geographic influences consisting of location, maps and their interpretation, climate, topography, soils, minerals, bodies of water, plants, animals, and the works of man. This course is required of all students in the Elementary School Teaching program, and is also recommended for those intending to specialize in foreign trade or the diplomatic service. Prerequisite: Economics 51-52 or permission of the department. 3 s.h. (E)

ASSOCIATE PROFESSOR LEMERT

120. ECONOMIC GEOGRAPHY OF THE PACIFIC.—The physical influences, natural resources, and economic activities of Asia, Oceania, and portions of the western coasts of North and South America with special emphasis upon their relationship to present developments. Prerequisite: Economics 51-52 or permission of the department. 3 s.h. (E)

ASSOCIATE PROFESSOR LEMERT; PROFESSOR TUTHILL

138. BUSINESS STATISTICS.—A survey of the principal statistical methods and their application to economics and business administration. The course deals with collection of statistical data, construction of statistical tables and charts, and a brief study of the fundamental statistical concepts and techniques. Offered both semesters. 3 s.h. (W)

PROFESSOR HANNA; ASSOCIATE PROFESSOR SAVILLE; MR. HUNTLEY

Open to juniors and to sophomores in the second semester. Not open to seniors except with the permission of the Director of Undergraduate Studies.

143. CORPORATION FINANCE.—Principles and problems in the financial organization of corporations; the study of corporate securities, the management of capital, the distribution of earnings; industrial combinations; insolvency and reorganization. Prerequisite: Economics 57-58, Principles of Accounting, or Economics 60, General Accounting. Offered both semesters. 3 s.h. (W)

PROFESSOR JOERG, PROFESSOR RATCHFORD;
ASSISTANT PROFESSOR BELL

144. INVESTMENTS.—A study of the investment policies of individuals and institutions; the securities markets; sources of investment information and data; the analysis and interpretation of financial statements. Prerequisites: Economics 57-58 or 60, and 143. 3 s.h. (W)

PROFESSOR JOERG

158. INSURANCE.—The development and basic principles of insurance. This course covers such topics as business uses, policy contracts, costs, and regulation of insurance. Life and fire insurance are emphasized. 3 s.h. (W)

ASSOCIATE PROFESSOR SAVILLE

3. BUSINESS ADMINISTRATION

The complete program of study listed under the heading Business on page 96 of this *Bulletin* must be completed for the Business Administration Major.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

EDUCATION

PROFESSOR CARTWRIGHT, CHAIRMAN; PROFESSOR CARR, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSORS BOLMEIER AND HURLBURT; ASSOCIATE PROFESSORS EASLEY, MCLENDON, PETTY, RUDISILL, STUMPF, AND WEITZ; ASSISTANT PROFESSORS COLVER, GEHMAN, AND REYNOLDS; ASSOCIATE PROFESSOR INGLES, DIRECTOR OF NURSING EDUCATION; PROFESSORS CLARK AND JACOBANSKY, AND ASSISTANT PROFESSORS BROCKER, GOLDSMITH, AND MOSES

Courses in the Department of Education are designed for two groups of students: (1) students with teaching experience or others who have definitely chosen teaching as their life-work, and (2) students who desire to study the school as an outstanding social institution. The courses listed in Nursing Education are for students preparing to teach in schools of nursing.

Students who do not expect to teach but merely desire an understanding of the school as part of a liberal education are advised to elect such courses as 84 and 88 for their introductory work in the Department and then to elect further work in accordance with their special interests. Students who expect to teach in the public schools should plan their courses in accordance with the general regulations set forth under Teaching on page 97 of this catalogue. *All prospective teachers must enroll in courses 84 and 88, preferably beginning before their junior year. They are then required to complete courses 103, 118, and 101-102 or 215-216 in their senior year.*

1. ORIENTATION IN STUDY AND STUDY HABITS.—A course for freshmen whose high-school and other records indicate the need for help in working out satisfactory study methods and in adjusting to college life. Note-taking from reading and lectures, time planning, remedial reading, and pertinent principles of the psychology of learning are among the matters considered. *Either semester.* 3 s.h. (w)

[Not offered in 1957-58.]

5. DEVELOPMENTAL READING.—A course consisting of study and practice for the improvement of the reading and study skills. Work is provided in such areas as vocabulary, speed of comprehension, critical interpretation, organization of ideas, and versatility of method in reading for different purposes. 3 s.h. (w)

ASSOCIATE PROFESSOR RUDISILL

84. SOCIAL FOUNDATIONS OF EDUCATION.—This course is the first of four intended to give the student a thorough survey of the place and function of education and an understanding of the school as a social institution. It is an introductory course emphasizing those historical, philosophical, and sociological factors which explain trends in American education. *Either semester.* 3 s.h. (w & e)

PROFESSORS CARTWRIGHT; ASSOCIATE PROFESSORS STUMPF AND MCLENDON

NOTE: Courses 84, 88, 103, and 118 constitute a sequence of 12 hours in Education required of all prospective teachers. Students who intend to teach in the elementary school should confer with Professors Carr or Petty and students who intend to teach in the secondary school should confer with Professors Hurlburt, McLendon or Reynolds in order to work this sequence into their schedules. See courses under Nursing Education for modified sequence of courses for students preparing to teach in schools of nursing.

88. EDUCATIONAL PSYCHOLOGY: LEARNING AND MEASUREMENT.—This course and Education 118 constitute a general introduction to the field of Educational Psychology. This course deals with (1) the psychology of learning,

including: the nature of the learning process; general principles or laws of learning; the course of learning and forgetting; factors influencing efficiency in learning and retention; and the transfer of training; and (2) measurement, including: the basic concepts in the measurement of intelligence; standardized achievement tests; the extent and significance of individual differences in ability and performance. Opportunity will be afforded for examination and study of a variety of tests of intelligence and achievement. *Either semester.* 3 s.h. (E)

ASSOCIATE PROFESSORS EASLEY AND RUDISILL;
ASSISTANT PROFESSOR GEHMAN

See note following course 84.

101-102. ELEMENTARY EDUCATION: PRINCIPLES AND PRACTICE.—The study of the nature, subject matter, and methods of elementary education. The course is designed to give prospective elementary teachers an understanding of basic principles and practices in the organization of instruction and of subject matter for the primary and grammar grades of the public school. Students may elect primary or grammar-grade work, according to their special interests. The specific problems which arise in the student teachers' experiences are treated in group and individual conferences. *For seniors only.* 9 s.h. (E)

PROFESSOR CARR; ASSOCIATE PROFESSOR PETTY

NOTE: Education 101-102, 103, and 118 constitute a semester's work during the senior year.

103. ORGANIZATION AND MANAGEMENT OF THE SCHOOL.—An introduction to the problems of school organization and administration which are of particular concern to the classroom teacher. Although federal and state control over education is briefly reviewed, the main consideration is the local school system. Considerable attention is given to the administration of teaching personnel, pupil personnel, and the program of studies. *Either semester.* 3 s.h. (E)

PROFESSOR BOLMEIER; ASSOCIATE PROFESSOR STUMPF

See notes following course 84, 101-102, 215-216.

118. EDUCATIONAL PSYCHOLOGY: PSYCHOLOGICAL DEVELOPMENT.—This course traces the psychological development of the individual from infancy to maturity. The principal topics considered are: the interdependence of hereditary and environmental factors in development, the nature of the development process, the establishment of the early basic patterns of behavior, changes and conditions producing these changes throughout childhood and adolescence to maturity, and the origin and treatment of minor behavior disorders. Not open to students who have had Psychology 121 or 126. Prerequisite: three semester hours in psychology or educational psychology. *Either semester.* 3 s.h. (E)

ASSOCIATE PROFESSOR EASLEY; ASSISTANT PROFESSOR GEHMAN

See notes following course 84, 101-102, 215-216.

142. CHILDREN'S LITERATURE.—Students enrolled will be allowed to specialize in literature of either the primary or the grammar grades. 3 s.h. (E)

PROFESSOR CARR; ASSOCIATE PROFESSOR RUDISILL

161. INTEGRATED ART IN THE PUBLIC SCHOOL.—Work in materials and methods as applied in two dimensional art. (Required of all students intending to teach in the elementary school.) 3 s.h. (E)

MR. STARS

162. PLASTIC ART IN THE PUBLIC SCHOOL.—Work in basic three dimensional art, giving an understanding of different sculptural media with special emphasis on ceramics. The course is designed for students in elementary and secondary art education, and will provide credit toward the North Carolina Elementary and Secondary Teaching Certificates. 3 s.h. (E)

MR. STARS

164. VOCAL MUSIC IN THE PUBLIC SCHOOL.—Materials and methods of teaching vocal music in the junior and senior high schools; emphasis on organization, administration, and performance of school choirs and ensembles; care of the changing voice. 3 s.h. (E)

ASSISTANT PROFESSOR SAVILLE

166. INSTRUMENTAL MUSIC IN THE PUBLIC SCHOOL.—Materials and methods of teaching instrumental music in the junior and senior high schools; emphasis on teaching technics, repertoire, organization, and administration of the instrumental curriculum. 3 s.h. (E)

ASSOCIATE PROFESSOR BONE

201. **TEACHING AND SUPERVISION OF ARITHMETIC.**—Special attention is given to the number system, the fundamental operations (with whole numbers, fractions, and decimals), percentage, and measurements. Considered also are the meaning theory, methods of teaching, problem solving, evaluation, practice and drill, and selection and gradation of arithmetical contents. This course is designed for teachers and supervisors in the elementary school. 3 s.h. (E)

ASSOCIATE PROFESSOR PETTY

203. **PRINCIPLES OF SCHOOL ADMINISTRATION.**—The fundamental facts and procedures of school administration, an analysis of the problems and policies of the organization and direction of a local school system and the functions of the various school officials. Prerequisite: six semester hours in education. 3 s.h. (E)

PROFESSORS BOLMEIER AND HURLBURT;

ASSOCIATE PROFESSOR STUMPF

215-216. **SECONDARY EDUCATION: PRINCIPLES AND INTERNSHIP.**—A one-semester course, the first half of which is devoted to an intensive study of principles, curriculum, and methods in secondary education. The second half consists of supervised internship in public junior or senior high schools. Students carrying this course for credit toward a master's degree will be required to take six hours of senior or graduate work in addition to the normal degree requirements. *Either semester.* 9 s.h. (E)

PROFESSORS CARTWRIGHT AND HURLBURT;

ASSOCIATE PROFESSOR MCLENDON;

ASSISTANT PROFESSOR REYNOLDS

Note: Education 215-216, 103, and 118 constitute a semester's work during the senior year.

224. **TEACHING THE SOCIAL STUDIES IN ELEMENTARY SCHOOLS.**—This course treats objectives, curriculum trends, methods, and materials in elementary-school social studies. Topics receiving emphasis include unit-planning, use of textbook, the reading program, the using of community resources, audio-visual materials, dealing with controversial issues, teaching time and place concepts, and evolution. Opportunity is provided for teachers to work on their own school problems in the social studies. 3 s.h. (E)

PROFESSOR CARTWRIGHT

225. **THE TEACHING OF HISTORY AND THE SOCIAL STUDIES.**—Evaluation of the objectives, content, materials, and methods in the teaching of History and the Social Studies. 3 s.h. (E)

PROFESSOR CARTWRIGHT

226. **TEACHING READING IN THE ELEMENTARY SCHOOL.**—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to developmental and remedial programs. Practice is provided with elementary-school children suffering reading retardation, in testing, diagnosis, and daily remedial teaching. 3 s.h. (E)

ASSOCIATE PROFESSOR RUDISILL

228. **IMPROVEMENT OF INSTRUCTION IN THE SOCIAL STUDIES.**—An advanced treatment of curriculum, methods, and materials in the social studies. Individuals will concentrate on subjects and grade levels of their choice. 3 s.h. (E)

ASSOCIATE PROFESSOR MCLENDON

232. **SUPERVISION OF INSTRUCTION.**—A survey of supervision as a means of improving instructing and adapting the curriculum to the learner and to community needs. 3 s.h. (E)

PROFESSOR CARR; ASSOCIATE PROFESSOR MCLENDON

234. **SECONDARY-SCHOOL ORGANIZATION AND ADMINISTRATION.**—This course is designed especially for principals, teachers, and other prospective members of the secondary-school staff. The scope of secondary education is considered to encompass junior high school, regular high school, senior high, and junior college. Special treatment is given to the problems of internal organization and management. 3 s.h. (E)

PROFESSOR BELMEIER

236. **TEACHING READING IN THE SECONDARY SCHOOL.**—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to develop-

mental and remedial programs. Practice is provided with secondary-school children suffering reading retardation, in testing, diagnosis, and daily remedial teaching. For secondary-school teachers of all subjects who wish to improve the reading and study habits of their students. 3 s.h. (E) ASSOCIATE PROFESSOR RUDISILL

239. METHODS AND PROBLEMS OF TEACHING ENGLISH IN SECONDARY SCHOOLS.—This course will present sound methods of teaching the reading of literature and other forms of writing, language, grammar and composition. Materials will include selections found in widely adopted textbooks, numerous specimen themes for grading, and current books and articles in the field. Several short compositions and a report will be required. 3 s.h. (E)

ASSOCIATE PROFESSOR BOWMAN

240. EDUCATIONAL AND OCCUPATIONAL INFORMATION.—A study of the sources of occupational and educational information: methods of securing and organizing occupational information; methods of providing vocational and educational information to students through career days, college conferences, class activities, and individual counseling; methods of making job analyses and community occupational surveys. 3 s.h. (w)

ASSISTANT PROFESSOR COLVER

241. PRINCIPLES OF GUIDANCE.—An historical survey of the philosophies of guidance; a study of the interrelationships between instruction, administration, and guidance in education. Prerequisite: 6 hours of psychology or educational psychology. 3 s.h. (w)

ASSISTANT PROFESSOR COLVER

246. THE TEACHING OF MATHEMATICS.—This course deals with such topics as aims, curriculum, course and lesson planning, and classroom procedure for teaching secondary-school mathematics. 3 s.h. (E) ASSISTANT PROFESSOR REYNOLDS

253. SCHOOL LAW.—The primary purpose of this course is to familiarize prospective school administrators and teachers with the legal features of school organization and administration. Although some attention is given to constitutional and statutory provisions, the main emphasis is upon court decisions relating to education. Students are expected to select appropriate problems in school law for intensive study. 3 s.h. (E)

PROFESSOR BOLMEIER

258. EDUCATIONAL MEASUREMENTS.—A critical study of the principles and techniques involved in measurement in education with opportunity for individual research. Prerequisite: 12 semester hours in the Department, including a course in educational psychology. 3 s.h. (E)

ASSOCIATE PROFESSOR WEITZ

266. SCIENCE IN THE ELEMENTARY SCHOOL.—Presentation of basic concepts in natural and physical science through selected readings, the use of simple experiments and demonstrations, construction and use of equipment, and field studies. 3 s.h. (E)

ASSISTANT PROFESSOR REYNOLDS

276. THE TEACHING OF HIGH-SCHOOL SCIENCE.—Discussion, lectures and collateral reading, related to such topics as aims, tests, curriculum, classroom and laboratory procedure, field trips, course and lesson planning for secondary-school science. 3 s.h. (E)

ASSISTANT PROFESSOR REYNOLDS

290. ADMINISTRATION OF SCHOOL PROPERTY.—Planning and management of the school plant and its equipment to meet instructional, health, and community needs for immediate and long-range purposes. This course is intended for teachers and principals as well as for superintendents. Areas to be treated include site selection; trends in design, lighting, ventilation and heating; custodial service and maintenance; and financing. 3 s.h. (E)

ASSOCIATE PROFESSOR STUMPF

[Not offered in 1957-58.]

NURSING EDUCATION

101N. THE CURRICULUM IN THE SCHOOL OF NURSING.—The general principles of curriculum making and the factors which determine the content and organization of the nursing school curriculum are considered in this course. 3 s.h. (w)

ASSOCIATE PROFESSOR INGLES; ASSISTANT PROFESSOR MOSES

115N-116N. NURSING EDUCATION: PRINCIPLES AND PRACTICE.—A special section of Education 115-116. Principles of teaching applied to the nursing school situations and the planning and evaluation of instruction. Ninety hours of observation and of supervised teaching in the Duke University School of Nursing are required. Four hours of conference, observation, and practice teaching are required each week. Before beginning practice teaching students must complete thirty hours of observation. 8 s.h. (w)

PROFESSOR JACOBANSKY

117N. COMMUNITY NURSING SERVICE.—Designed for administrators, teachers, and supervisors in schools of nursing. Emphasis is on the integration of outpatient departments and community social and health agencies into the nursing school curriculum and on the preparation of nurses for community service. 3 s.h. (w)

ASSISTANT PROFESSOR BROCKER

120N. NURSING EDUCATION: PROBLEMS IN NURSING CARE.—Each student works on an individual problem designed to improve the nursing care of patients. 3 s.h. (w)

ASSOCIATE PROFESSOR INGLES; ASSISTANT PROFESSOR GOLDSMITH

[Not offered in 1957-58.]

130N. PSYCHOSOMATIC NURSING.—A study of the close relationship between mind and body in all illness, and of the techniques of observation and interview, both experimental and therapeutic. Lectures, clinics, conferences, discussions and experience with patients. 4 s.h. (w)

ASSISTANT PROFESSOR GOLDSMITH

[Not offered in 1957-58.]

131N-132N. PSYCHIATRY AND PSYCHIATRIC NURSING.—An advanced study with special emphasis on personality development and the preventive and therapeutic aspects of psychiatry and psychiatric nursing. In the second semester the management of practical situations of increasing complexity is stressed. Lectures, clinics, conferences, discussions and experience with patients. 8 s.h. (w)

[Not offered in 1957-58.]

ASSISTANT PROFESSOR GOLDSMITH

133N. SEMINAR IN PSYCHIATRIC NURSING.—Special study of areas such as behavior problems of children, projective tests, group therapy, mental hygiene clinics, etc. 3 s.h. (w)

ASSISTANT PROFESSOR GOLDSMITH

[Not offered in 1957-58.]

134N-135N. ADVANCED MEDICAL AND SURGICAL NURSING.—A study of the medical and surgical aspects of selected diseases, aimed at giving the student a better comprehension of the total care necessary to bring about the best possible results for patients. Lectures, discussions, case histories, and planned observation and experience with patients. 8 s.h. (w)

ASSOCIATE PROFESSOR INGLES;

ASSISTANT PROFESSOR MOSES

136N. SEMINAR IN MEDICAL OR SURGICAL SPECIALTY.—Directed study in a selected medical or surgical specialty. Each student works on a problem of major interest to her. Individual research in the collection of original material. 3 s.h. (w)

ASSOCIATE PROFESSOR INGLES

160N. SOCIAL FOUNDATIONS OF NURSING EDUCATION.—A survey of major historical, philosophical, and sociological factors which have affected developments in nursing and nursing education. The purpose of the course is to give the student a better understanding of the place of nursing in present day society and the responsibilities of the individual nurse toward that society. 3 s.h. (w)

PROFESSOR JACOBANSKY

193N. WARD ADMINISTRATION AND TEACHING.—This course is designed to help head nurses better to understand their functions in planning and managing a program on a hospital division which will result in improved care of patients, greater satisfaction for professional and non-professional personnel, and a more adequate teaching program for students and others. 3 s.h. (w)

PROFESSOR CLARK; ASSOCIATE PROFESSOR INGLES

195N. PERSONNEL WORK IN SCHOOLS OF NURSING.—The primary purpose of this course is to help head nurses and supervisors to develop greater understanding of the principles of human behavior and greater ability to apply these

principles in working with patients and others on hospital divisions, and in establishing cooperative relationships with other departments of the hospital. 3 s.h. (w)
 PROFESSOR JACOBANSKY

DEPARTMENTAL MAJOR

Major Requirements: 1. Number of hours needed: 24 hours in the Department.
 2. Required courses: 84, 88, 103, 118; and for elementary teachers, 101-102; for secondary teachers, 215-216.

Related Work: Sufficient work in subjects to be taught to meet certification requirements in state in which student intends to teach.

MATERIALS AND METHODS COURSES

Certain courses concerned with materials and methods in teaching the various subjects in the public school curriculum are listed in the proper subject matter department. These courses are intended to give credit on teaching certificates and are recommended by the Department of Education for such credit.

SCIENCE EDUCATION MAJOR

Students desiring to teach science in secondary schools should read the description of this program on page 90.

ENGLISH

PROFESSOR WARD, CHAIRMAN; PROFESSOR BEVINGTON, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR BOWMAN, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS BLACKBURN, BOYCE, BRINKLEY, GILBERT, GOHDES, IRVING, SANDERS, STEVENSON, AND TURNER; ASSOCIATE PROFESSORS FISHER, HARWELL, PATTON, REARDON, AND WHITE; ASSISTANT PROFESSORS BEVINGTON, BUDD, JORDAN, MICHALAK, POTEAT, SCHWERMANN, SMITH, AND WETHERBY; DR. ANDERSON, HENINGER, KOTTLER, MAJOR, SPENCER, AND WICKES; MESSRS. BOATWRIGHT, BORNHAUSER, GRAVES, HARGREAVES, MCDONALD, MORRIS, REEVES, AND VAN FOSSEN

L. ENGLISH FUNDAMENTALS.—All freshmen whose scores on the placement tests indicate that they are not ready for English 1 must take this course. Students who fail in English L must repeat the course. Students who have earned credit in English L must also take English 1 and 2. 3 s.h. (w)

ASSISTANT PROFESSOR JORDAN AND MR. GRAVES

1-2. ENGLISH COMPOSITION.—All freshmen are required to take course 1 and course 2. (For exemptions, see Uniform Course Requirements, p. 94.)

Students who fail in English 1 or 2 must repeat the course in the following semester. Students in courses 1 and 2 who fail to make an average of "C" or better are strongly advised to earn credit for an additional course in English composition. 6 s.h. (E & W)

ASSOCIATE PROFESSOR BOWMAN AND STAFF

33. WRITING LABORATORY.—A non-credit course in elementary composition which may be elected by students who need it, or may be required of certain students under the conditions stated on page 92, "Deficiencies in Composition." Students may enter or leave this course at any time, at the instructor's discretion. (w)
 MR. REEVES, MR. GRAVES

53. ENGLISH COMPOSITION.—A course in advanced composition and grammar. Emphasis is placed first on the student's mastering the fundamental principles of English grammar and the other essentials of correct writing. Weekly themes are required. 3 s.h. (w)
 ASSISTANT PROFESSOR JORDAN

65-66. ENGLISH COMPOSITION.—A foundation course in imaginative writing, both prose and verse. Open to sophomores and in special cases to freshmen. The consent of the instructor is required. 6 s.h. (E)
 PROFESSOR SANDERS

E93. WRITTEN AND ORAL COMMUNICATION FOR ENGINEERS.—Emphasis will be placed on the writing of business letters, technical reports, and articles for submission to technical journals. Approximately one-third of the course will provide training in the oral presentation of various materials. Prerequisite: English 1 and 2. 3 s.h. (w) ASSOCIATE PROFESSOR HARWELL

101. EXPOSITORY ENGLISH COMPOSITION.—The course attempts to encourage fluency and accuracy in expository expression. Primarily for juniors and seniors; open also to sophomores approved by the instructor. 3 s.h. (w)

103-104. ENGLISH COMPOSITION.—A course in descriptive and narrative writing. Class discussion of students' manuscripts, supplemented by a critical evaluation of a few selected short stories and by individual conferences with the instructor. Open to sophomores, juniors, and seniors. The consent of the instructor should be secured as early as possible in the spring semester. Prerequisites for English 104: English 103. 6 s.h. (E) PROFESSOR BLACKBURN

SPEECH AND DRAMA

118. PERSUASIVE SPEAKING.—The psychological and sociological techniques used in gaining acceptance of ideas through speech. Study is made of the factors influencing human behavior; audience analysis and motivation; choice, arrangement, and adaptation of material. Extensive practice in persuasive speaking. Prerequisite: English 151 or consent of the instructor. 3 s.h. (w) ASSISTANT PROFESSOR WETHERBY

119. HISTORY OF THE THEATRE.—The origin and development of drama, acting, and stagecraft from ancient Greece to the modern European and American theatre. Production problems of representative plays of the various periods will be discussed. Primarily for juniors and seniors, open also to sophomores approved by the instructor. 3 s.h. (E) ASSOCIATE PROFESSOR REARDON

121. STAGECRAFT.—An introductory course on the technical aspects of play production: scenery, lighting, properties, make-up, and costuming. Lectures and laboratory. Laboratory work will be coordinated with the various productions of the Duke Players. Primarily for juniors and seniors; open also to sophomores approved by the instructor. 3 s.h. (E)

ASSOCIATE PROFESSOR REARDON AND ASSISTANT PROFESSOR MICHALAK

122. PLAY PRODUCTION.—An introduction to the methods of producing a play: theatre organization, play selection, casting, and rehearsal. Lectures and laboratory. Primarily for juniors and seniors; open also to sophomores approved by the instructor. 3 s.h. (E) ASSOCIATE PROFESSOR REARDON AND ASSISTANT PROFESSOR MICHALAK

139. THE SPEAKING VOICE.—The correction of minor functional speech disorders. The speech organs and their function. The International Phonetic Alphabet and its use. Drill in pronunciation, diction, vocal quality. Primarily for sophomores, juniors, and seniors; also open to freshmen with the consent of the instructor. 3 s.h. (E & w) ASSISTANT PROFESSORS SCHWERMANN AND WETHERBY
[Offered both semesters]

150. ORAL INTERPRETATION OF LITERATURE.—A study of poetry and certain types of prose, with practice in the technique by which they may be communicated to an audience. 3 s.h. (w) ASSISTANT PROFESSOR SCHWERMANN

151. ESSENTIALS OF PUBLIC SPEAKING.—A basic course in public speaking, designed to give the student the poise and confidence necessary to think and speak freely before an audience. Particular attention is paid to the gathering and organization of speech materials and to oral presentation. 3 s.h. (E & w)

ASSOCIATE PROFESSOR REARDON AND ASSISTANT PROFESSORS SCHWERMANN, WETHERBY AND MICHALAK
[Offered both semesters]

152. ARGUMENTATION.—The principles of argumentation and debating. The techniques of analysis, investigation, evidence, reasoning, brief making, and refutation. Participation in class discussions and debates. Prerequisite: English 151 or consent of the instructor. 3 s.h. (w) ASSISTANT PROFESSOR WETHERBY
[Offered in the fall semester]

171, 172. RADIO BROADCASTING.—The theory and practice of radio broadcasting. The purpose, preparation, and production of various types of radio programs. There will be experience before a microphone in a studio situation. Laboratory work both semesters. Primarily for juniors and seniors; open also to sophomores approved by the instructor. 6 s.h. (w)

ASSISTANT PROFESSORS WETHERBY AND MICHALAK

ENGLISH AND AMERICAN LITERATURE AND LANGUAGE

55, 56. REPRESENTATIVE WRITERS.—The following works are studied in the first semester: Chaucer's Prologue to *The Canterbury Tales* and at least two tales, Shakespeare's *I Henry IV* and *King Lear* and one other play, John Donne's poems, Milton's *Paradise Lost* (selections) and some of the shorter poems; in the second semester; Pope's *Poems* (selections), Fielding's *Joseph Andrews*, Keats's *Poems and Letters*, Arnold's *Selected Poetry and Prose*, Dickens's *Bleak House*, Yeats's *Collected Poems*, Shaw's *Saint Joan*, and a twentieth-century novel 6 s.h. (E & W)

PROFESSORS BEVINGTON, BLACKBURN, BOYCE, SANDERS, AND STEVENSON;

ASSOCIATE PROFESSORS FISHER, HARWELL, AND PATTON; ASSISTANT

PROFESSORS BEVINGTON, JORDAN, POTEAT, AND SMITH;

DRS. ANDERSON, HENINGER, KOTTLER, MAJOR,

AND SPENCER; MESSRS. McDONALD,

MORRIS, VAN FOSSEN

111, 112. EIGHTEENTH-CENTURY LITERATURE.—The writers emphasized in the first term are Pope, Swift, Defoe, Addison, Steele, Fielding; in the second term, Johnson, Gray, Boswell, Sheridan, the later novelists, and Blake.

PROFESSOR BOYCE

117. MILTON.—Milton's poetry and prose, together with their relation to the period and to other great works of literature. Lectures, discussion, occasional tests, one or two papers. 3 s.h. (E)

PROFESSOR BRINKLEY AND DR. MAJOR

123, 124. SHAKESPEARE.—In the first semester twelve plays, before 1600; in the second semester ten plays, after 1600. Occasional tests and one or two papers. 6 s.h. (E & W)

ASSOCIATE PROFESSOR BOWMAN; DR. MAJOR, DR. WICKES

125, 126. ENGLISH LITERATURE, 1789-1832.—The course begins with selections from the poetry of the forerunners of Romanticism. The chief emphasis in the first semester is on the work of the older Romantics: Wordsworth, Coleridge, Southey, Scott, and Lamb. In the second semester the chief emphasis is on the work of the younger Romantics: Byron, Shelley, Keats, Leigh Hunt, Hazlitt, and DeQuincey. Informal lectures and class discussion of assigned texts. A limited amount of outside reading is required and also some memory work. There are four tests each semester. 6 s.h. (E & W)

PROFESSOR SANDERS, PROFESSOR STEVENSON;

ASSOCIATE PROFESSOR PATTON

129, 130. ENGLISH NOVEL.—The work of the first semester covers the history of the novel through Scott; that of the second semester, from Dickens through Hardy. Lectures and book reports. 6 s.h. (E)

ASSISTANT PROFESSOR SMITH

131, 132. ENGLISH LITERATURE, 1832-1900.—A study of the chief English writers of poetry, prose, and drama from Carlyle to Yeats. The major writers studied in the first semester are Carlyle, Tennyson, Browning, Macaulay, Mill, Newman, and Arnold; in the second semester, Ruskin, the Rossetts, Morris, Swinburne, Shaw, and Yeats, with selections from minor writers. Collateral reading from novels of the period. Lectures, discussions, tests, and reports. 6 s.h. (E & W)

PROFESSORS BEVINGTON AND SANDERS

134. CONTEMPORARY POETRY.—A reading course in the poetry of the twentieth century in England, Ireland, and America, beginning with Gerard Manley Hopkins, and William Butler Yeats. An anthology of modern poetry is read and discussed, supplemented by the wider reading of individual poets. Informal lectures and discussions with a critical paper for the term. Open to juniors and seniors, and occasionally to sophomores by special permission. 3 s.h. (E)

ASSISTANT PROFESSOR BEVINGTON

137, 138. AMERICAN LITERATURE.—A survey of American literature from colonial times to the present. Selections from the works of important authors are read, from Cotton Mather to Eugene O'Neill, and complete novels by Hawthorne, Melville, James, Howells, and others. The work of the first semester ends with the Civil War period. Lectures, monthly tests, and a term paper each semester. 6 s.h. (E & W) PROFESSORS GOHDES AND TURNER; ASSISTANT PROFESSOR BUDD; DR. ANDERSON

141. CHAUCER.—*The Canterbury Tales* and the minor poems, with attention to their literary, social, and religious background. Lectures, discussions and reports. 3 s.h. (W) DR. KOTTLER

143, 144. ENGLISH LITERATURE: ELIZABETHAN AND EARLY SEVENTEENTH CENTURY.—A study of the prose, poetry, and drama of the period. First semester: the emphasis in prose is on Sidney; in poetry, on Spenser and Shakespeare; in drama, on Marlowe and Jonson. Second semester: the emphasis in prose is on the English Bible, Bacon, Browne; in poetry, on Donne and on the early poems of Milton; in drama, on Webster and Ford. Lectures, tests, and one or two brief papers. 6 s.h. (E) PROFESSOR BLACKBURN

153, 154. COMPARATIVE LITERATURE.—Important works in European literature are read in translation and related to similar documents in English literature. In the first semester are read: nine Greek tragedies, five of Plato's *Dialogues*, Vergil's *Aeneid*, Dante's *Inferno*, and Cellini's *Autobiography*; in the second semester, Machiavelli, Cervantes, Molière, Voltaire's *Candide*, Goethe's *Faust*, Dostoevski's *The Brothers Karamazov*, Ibsen's plays. Discussions, tests, reports. 6 s.h. (E) DR. HENINGER

155. MODERN EUROPEAN DRAMA.—The emphasis is on Ibsen, Strindberg, and Chekhov, and on the Free Theatre movements. Some quite recent plays will also be studied. 3 s.h. (E) ASSOCIATE PROFESSOR WHITE

156. MODERN BRITISH AND AMERICAN DRAMA.—Types of drama are studied in relation to European origins and to contemporary scene. The students subscribe to *Theatre Arts*. 3 s.h. (E) ASSOCIATE PROFESSOR WHITE

158. CONTEMPORARY FICTION.—Intensive reading in selected fiction since 1890, with emphasis on form and technique. Conrad, James, Lawrence, Kafka, Proust, Joyce, Huxley, and Faulkner. Lectures, discussions, reports on outside reading, and a term paper. 3 s.h. (W) ASSISTANT PROFESSOR SMITH

161, 162. MODERN ENGLISH AND ITS BACKGROUNDS.—An elementary historical and descriptive study of the English language: patterns of change and growth, standards of usage and pronunciation. Some attention is given to the methods of linguistic inquiry and to the relations of philology to literary studies. The first semester is devoted chiefly to a historical study of written and spoken English, the second to a description of modern American English. Lectures, discussions, and short reports. 6 s.h. (E)

165. AMERICAN FICTION.—A survey of the American novel and short story in the nineteenth century, from Washington Irving to Henry James. Lectures, discussions, and a critical paper. 3 s.h. (E) ASSISTANT PROFESSOR BUDD

166. AMERICAN FICTION.—A survey of the American novel and short story in the present century, centered around ten representative books. Lectures, discussions, and frequent quizzes. 3 s.h. (E) ASSISTANT PROFESSOR BUDD

197-198. SENIOR SEMINAR IN ENGLISH.—A course designed to offer guidance in the analysis and interpretation of English and American literature to students of superior ability. Comparative studies will be encouraged, and considerable reading will be required in critical and aesthetic theory. Emphasis will be placed upon the quality of the final essay. Admission by invitation of the department. 6 s.h. PROFESSOR BEVINGTON

FOR SENIORS AND GRADUATES

203, 204. CHAUCER.—Reading and interpretation of the text; in the first semester the minor poems and *Troilus*; in the second, the *Canterbury Tales*. 6 s.h. [Not offered in 1957-58.] ASSOCIATE PROFESSOR FISHER

207-208. HISTORY OF THE ENGLISH LANGUAGE.—A survey of the language from Old to Present English, taking into consideration developments in phonology, morphology, syntax, and vocabulary. 6 s.h. ASSOCIATE PROFESSOR FISHER

215, 216. ELIZABETHAN DRAMA.—Careful study of one or two major dramatists (Jonson or Beaumont and Fletcher) and extensive reading in the other writers (Heywood, Ford, Massinger, Marlowe, Middleton) with emphasis on the nature and qualities of their work in relation to its historical background. 6 s.h. (w) PROFESSOR GILBERT

217. MILTON.—Milton's poetry and prose, with emphasis on the major poems. 3 s.h. (w) PROFESSOR GILBERT

218. SPENSER.—The reading of Spenser's works, with chief attention to *The Faerie Queene*. 3 s.h. (w) [Not offered in 1957-58.] PROFESSOR GILBERT

219, 220. THE EIGHTEENTH CENTURY.—Swift, Pope, Defoe, Addison, Steele, and others are studied in the first semester; in the second, Gray, Johnson, Boswell, Goldsmith, the letter writers, and the early Romantic poets. 6 s.h. (w) [Not offered in 1957-58.] PROFESSOR BOYCE

221, 222. ENGLISH LITERATURE OF THE EARLY NINETEENTH CENTURY.—The British Romantic poets and prose writers from Scott to the early Carlyle, with special attention to Wordsworth, Coleridge, and Keats. 6 s.h. [Not offered in 1957-58.] PROFESSOR SANDERS, PROFESSOR STEVENSON

223, 224. ENGLISH LITERATURE OF THE LATER NINETEENTH CENTURY.—Some of the most important works of the period are discussed; the background is filled in by lectures and assigned reading. The first semester is devoted chiefly to Carlyle, Dickens, Thackeray, Tennyson, and Browning; the second semester to Arnold, Ruskin, Pater, George Eliot, Meredith, the Pre-Raphaelites, and Swinburne. 6 s.h. (w) PROFESSOR STEVENSON

227. LITERARY CRITICISM.—A study of the Greek and Roman critics, in chronological order but with emphasis on their permanent value rather than on the mere history; also the Continental and English critics to about 1700. 3 s.h. (w) [Not offered in 1957-58.] PROFESSOR GILBERT

229, 230. AMERICAN LITERATURE, 1800-1870.—The writers emphasized in the first semester are Emerson, Thoreau, and Hawthorne; in the second semester, Poe and Melville. 6 s.h. PROFESSOR TURNER

231. EMERSON.—A study of Emerson's ideas as reflected in selected examples of his essays and poems. 3 s.h. PROFESSOR GOHDES

232. WHITMAN.—A detailed study of *Leaves of Grass* and of selected prose works. 3 s.h. (ε) [Not offered in 1957-58.] PROFESSOR GOHDES

233. AMERICAN LITERATURE 1870-1900.—Selected works of the chief authors of the period, including Whitman, Lanier, Mark Twain, James, Howells, Crane, and Emily Dickinson. The lectures will deal with the social background as well as the literary trends and the careers of the major authors. 3 s.h. PROFESSOR GOHDES

234. AMERICAN LITERATURE OF THE TWENTIETH CENTURY.—Selected works of representative authors, including Dreiser, Edith Wharton, Mencken, Lewis, Willa Cather, O'Neill, Robinson, Frost, Eliot, Hemingway, and Faulkner. The lectures will deal primarily with literary trends as shaped by the social background. 3 s.h. PROFESSOR GOHDES

237. ENGLISH DRAMA, 1642-1800.—The heroic play and the comedy of manners of the Restoration; the important plays, serious and comic, of the eighteenth century. 3 s.h. [Not offered in 1957-58.] PROFESSOR WARD

239. SHAKESPEARE.—A study of the plays and poems, with attention to sources, earlier criticism, and the work of Shakespeare's contemporaries. 3 s.h. PROFESSOR GILBERT

245. **THE EIGHTEENTH-CENTURY NOVEL.**—Richardson, Fielding, Smollett, and Sterne are emphasized. Some attention is given to earlier prose fiction and to other contributing literary patterns. 3 s.h.
[Not offered in 1957-58.] PROFESSOR BOYCE

251, 252. **ENGLISH LITERATURE IN THE SEVENTEENTH CENTURY.**—A survey course. The major works in prose, poetry, and drama from 1600 to the death of Dryden. 6 s.h.
PROFESSOR WARD

262. **ENGLISH LITERATURE OF THE EARLY TWENTIETH CENTURY.**—Representative work of leading writers from 1900 to 1930, in the fields of fiction, drama, poetry, and essay. Critical analysis of selected specimens, and discussion of types, themes, and trends. 3 s.h.
[Not offered in 1957-58.] PROFESSOR STEVENSON

269, 270. **SOUTHERN LITERATURE.**—The principal authors and the chief literary developments from the beginnings to the present. Emphasis in the first semester is on Byrd, Kennedy, Simms, Poe, Timrod, and the humorists; in the second on Lanier, Harris, Cable, Mark Twain, Ellen Glasgow, and Faulkner. Attention is given to the historical and cultural background and to literary relations extending outside the region. 6 s.h.
[Not offered in 1957-58.] PROFESSOR TURNER

273. **HAWTHORNE AND MELVILLE.**—Extensive reading in the works of Hawthorne and Melville, and close study of selected writings. 3 s.h.
[Not offered in 1957-58.] PROFESSOR TURNER

274. **AMERICAN HUMOR.**—The development of the native tradition in the Down-East humorists and the humorists of the Old Southwest. Extensive reading in Mark Twain and his contemporaries, and some attention to the continuation of the tradition after Mark Twain. 3 s.h.
[Not offered in 1957-58.] PROFESSOR TURNER

DEPARTMENTAL MAJOR

Prerequisite: English 1 and 2.

Major Requirements: Twenty-four semester hours in English and American literature including the following:

1. Six hours in English 55-56.
2. Six hours at the Junior-Senior level (generally to be taken in the Junior year) in one of five designated period courses (143-144, 111-112, 125-126, 131-132, 137-138).
3. Three hours in one of the major authors, Chaucer, Shakespeare, or Milton (141, 203, 204, 123, 124, 239, 117, 217).
4. Six hours (to be taken in the Senior year) in Senior-Graduate courses, numbered at the 200 level. These courses are to be chosen so that surveys of particular periods do not duplicate in subject matter the courses taken in (2) above. This requirement becomes effective with the graduating class of 1959.
5. The remaining hours must meet the following distribution requirements:
 - (a) Three hours of English literature before 1800, unless the requirement is met in (2) or (4) above.
 - (b) Three hours of English literature after 1800, unless the requirement is met in (2) or (4) above.
 - (c) Three hours of American literature, unless the requirement is met in (2) or (4) above.

Related Work: Eighteen semester hours, which may include appropriate courses in history, aesthetics, art, music, languages, literature in translation, philosophy, or courses in composition, dramatics, and speech. Related work must be taken in at least two departments.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

FORESTRY

Students without a Bachelor's degree who are preparing for work in forestry as a profession should take the courses outlined under the Academic-Forestry Combination in the section on Requirements for Degrees. However, with the consent of the instructor in charge, certain forestry courses may be elected by students in other curricula provided they have had adequate preparation (see *Bulletin of the School of Forestry*).

Members of the sophomore, junior, and senior classes, whether or not registered in the Academic-Forestry Combination, may elect the following course:

52. **PRINCIPLES OF FORESTRY.**—Introduction to forestry in the United States; growth of trees and forests; social and economic problems in developing America's primary renewable natural resource; contribution of forests to the national economy. 2 s.h. (w)

GEOLOGY

PROFESSOR BERRY, CHAIRMAN AND DIRECTOR OF UNDERGRADUATE STUDIES; VISITING PROFESSOR ROBERTSON; ASSISTANT PROFESSOR HERON AND MR. FURBISH

51. **GENERAL GEOLOGY.**—This course is designed to give a general view of the surface features of the earth, their origin, structure, and materials. Illustrative materials are studied in the laboratory. Excursions are made to neighboring points where the principles of the science are studied in the field. Three one-hour lectures or recitations and one three-hour laboratory. 4 s.h. (E)

ASSISTANT PROFESSOR HERON AND MR. FURBISH

52. **GENERAL GEOLOGY.**—This course is designed to give some knowledge of the chief events of the earth's history. Excursions will be made to suitable neighboring localities. Three one-hour lectures or recitations and one three-hour laboratory. Prerequisite: Geology 51. 4 s.h. (E)

ASSISTANT PROFESSOR HERON AND MR. FURBISH

55. **STRUCTURAL GEOLOGY.**—A study of the structural features of the earth's crust. Three one-hour lectures. Prerequisite: Geology 51, 52. 3 s.h. (E)

ASSISTANT PROFESSOR HERON

58. **GEOMORPHOLOGY.**—A detailed study of the process at work on the land surface and the topographic forms produced by them under different climatic conditions. This course includes practice in the interpretation of topographic maps. Three one-hour lectures or recitations and one three-hour laboratory. 4 s.h. (E)

PROFESSOR BERRY

101-102. **MINERALOGY.**—This course is devoted to a study of the fundamentals of crystallography and the crystal groups, using crystal models and crystallized minerals. Followed by the systematic study of about 175 important minerals. Determinative work includes exercises on sight recognition, identification by blow-pipe, and other physical and chemical tests. Excursions will be made to neighboring mineral localities. Three two-hour periods. Prerequisite: Chemistry 1-2 (can be taken concurrently). 8 s.h. (E)

PROFESSOR BERRY

151. **ECONOMIC GEOLOGY.**—Study of world distribution, geologic occurrence, and uses of important mineral deposits. Three one-hour lectures or recitations and one three-hour laboratory. Prerequisite: Geology 101-102. 4 s.h. (E)

PROFESSOR BERRY

152. **INTRODUCTORY PALEONTOLOGY.**—Systematic study of invertebrate paleontology, dealing mainly with generic characters of the fossil invertebrates and their use in identifying and correlating geologic formations. Three one-hour lectures or recitations and one three-hour laboratory. Prerequisites: Geology 51, 52, and Zoology 2. 4 s.h. (E)

PROFESSOR BERRY

164. **INTRODUCTION TO GEOLOGIC MAPPING.**—An introduction to the fundamental principles and techniques used in geologic mapping, including applicable methods of surveying, the use of aerial photographs, the interpretation of

geologic maps, and the solution of problems in geologic relationships. Field excursions will be made when possible. Two hours of lecture and three hours of laboratory each week. Prerequisites: Geology 51, 52, 55, 151. 3 s.h. (E)

ASSISTANT PROFESSOR HERON

DEPARTMENTAL MAJOR

Prerequisites: Chemistry 1-2; Zoology 2, Geology 51, 52.

Major Requirements: 1. Number of hours needed, 30 s.h. 2. Required courses, Geology 55, 101-102, 151, 152, 164. 3. Recommended courses, Geology 58.

Related Work: 1. Number of hours needed for A.B., 12 s.h.; for B.S., 18 s.h. 2. Required courses, 1 year Mathematics. 3. Departments in which related work is usually taken, Chemistry, Economics 115-116, Mathematics, Physics, Sociology 93, Zoology, and Engineering.

GERMANIC LANGUAGES AND LITERATURE

PROFESSOR SALINGER, CHAIRMAN; ASSOCIATE PROFESSOR MAXWELL, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR WILSON, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSOR SHEARS; ASSISTANT PROFESSOR TARABA; DR. ILKOW

1-2. ELEMENTARY GERMAN.—6 s.h. (E & W)

ASSOCIATE PROFESSOR MAXWELL AND STAFF

3-4. INTERMEDIATE GERMAN.—6 s.h. (E & W)

ASSOCIATE PROFESSOR WILSON AND STAFF

51-52. INTRODUCTION TO GERMAN LITERATURE.—A third year course. Both literary and linguistic factors are combined with practice in the spoken language. 6 s.h.

PROFESSOR SHEARS AND STAFF

For courses in the 100 and 200 group, which will be offered in 1957-58, please consult list furnished by Dean's office before registration. The only prerequisite for 100 group courses is German 3-4.

107, 108. SCIENTIFIC GERMAN.—The German language as used in the various contemporary sciences. 6 s.h.

ASSOCIATE PROFESSORS MAXWELL AND WILSON

109, 110. GERMAN PROSE FICTION.—Origin and development of the German novel with special emphasis on the nineteenth century. 6 s.h.

ASSOCIATE PROFESSOR WILSON

115, 116. GERMAN DRAMA OF THE NINETEENTH CENTURY.—A study of leading dramatists from Kleist to Hauptmann. 6 s.h.

ASSOCIATE PROFESSOR WILSON

117, 118. GERMAN CONVERSATION.—A course in writing and speaking German for properly qualified students. 6 s.h.

ASSISTANT PROFESSOR TARABA AND DR. ILKOW

119, 120. GERMAN LITERATURE IN ENGLISH TRANSLATION.—The great epochs in German literature studied through English translations of representative masterpieces. 6 s.h.

PROFESSOR SALINGER

125, 126. CONTEMPORARY GERMAN LITERATURE.—A study of representative works of the twentieth century. 6 s.h.

PROFESSOR SHEARS

131, 132. INTRODUCTION TO GOETHE.—The reading of his early novels and epics and works pertaining to his life. 6 s.h.

ASSOCIATE PROFESSOR MAXWELL

133, 134. THE GERMAN LYRIC.—A survey of the development of German lyric poetry, principally from Klopstock to Rilke (with some attention to mediaeval and early modern poets), seen as poetic reflection of German thought. 6 s.h.

PROFESSOR SALINGER

201, 202. GOETHE.—A study of his life and works in the light of his lasting significance to World Literature. 6 s.h.

PROFESSOR SALINGER

203, 204. EIGHTEENTH CENTURY.—Eighteenth-century German literature in its relation to contemporary European philosophy. 6 s.h.

PROFESSOR SALINGER

205, 206. MIDDLE HIGH GERMAN.—The language and literature of Germany's first classical period. 6 s.h.
ASSISTANT PROFESSOR TARABA

207, 208. GERMAN ROMANTICISM.—The course covers the entire field of German romanticism from 1800 to 1850. 6 s.h.
PROFESSOR SALINGER

209, 210. KLEIST, GRILLPARZER, and HEBBEL.—The development of the drama in Germany and Austria between Schiller and Naturalism. 6 s.h.
PROFESSOR SALINGER

211, 212. HEINRICH HEINE AND HIS TIME.—Heine's life and thought, and the contemporary European culture. 6 s.h.
PROFESSOR SALINGER

213, 214. LITERATURE OF THE EMPIRE, 1871-1914.—A study of the literature of this period with emphasis on a few leading writers. 6 s.h.
PROFESSORS SHEARS AND SALINGER

DEPARTMENTAL MAJOR

1. Prerequisites: German 1-2 and 3-4.

2. Major Requirements: Twenty-four semester hours in the German Department. Twelve of these must be selected from the 200 courses. The remaining twelve may be selected from German 51-52 and any courses in the 100 group except 119-120.

3. Related Work: Eighteen semester hours, chosen from the Humanities with the approval of the German Department.

GOVERNMENT

See courses listed under Political Science.

GREEK

ASSOCIATE PROFESSOR TRUESDALE, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR ROSE, SUPERVISOR OF FRESHMAN INSTRUCTION;
ASSOCIATE PROFESSOR WAY

Courses 15, 121, 122, 131, 141, 142 are entirely in English and require no knowledge of the Greek language. The purpose in offering them is to give a wider circle of students some conception of the debt which modern civilization owes to the Greeks.

1-2. COURSE FOR BEGINNERS.—Open to all students. 6 s.h. (w)

ASSOCIATE PROFESSOR TRUESDALE

15. MYTHOLOGY.—A study of Greek mythology and the use made of it in art and English literature. No knowledge of the Greek language is required. Open to freshmen as an elective in either semester. 3 s.h. (w & e)

ASSOCIATE PROFESSORS TRUESDALE AND WAY

53-54. XENOPHON.—*Anabasis*, Books I-IV. Open to students who have completed course 1-2. 6 s.h. (w)

ASSOCIATE PROFESSOR ROSE

105-106. HOMER.—*Iliad*, Books I-III. PLATO.—*Apology* and *Crito*. Open to students who have completed courses 1-2 and 53-54 or their equivalents. 6 s.h. (w)

ASSOCIATE PROFESSOR TRUESDALE

107-108. EURIPIDES.—*Medea*. SOPHOCLES.—*Oedipus Tyrannus*. ARISTOPHANES.—*Clouds*. Open to students who have completed the required preliminary work. 6 s.h. (w)

ASSOCIATE PROFESSOR WAY

117-118. GREEK PROSE COMPOSITION.—The character of this course is determined by the needs of the students enrolled. 3 s.h. (w)

ASSOCIATE PROFESSOR ROSE

121, 122. GREEK LITERATURE IN ENGLISH TRANSLATION.—The purpose of this course is to give a general survey of the life and civilization of the Greeks, especially to those who have never studied the language but wish to become acquainted with some of the choicest portions of the literature by the use of trans-

lations. It is, however, open as an elective to all juniors and seniors, whether they know Greek or not. First, the *Iliad* and the *Odyssey* are read in translation and illustrated with stereopticon views of the excavations and discoveries at Troy and other cities of the Aegean age; then, many of the extant plays of the three great tragic poets are studied in English translation. 6 s.h. (W & E)

ASSOCIATE PROFESSORS ROSE AND TRUESDALE

Students may elect course 122, whether they have taken course 121 or not.

131. HISTORY OF GREECE.—The history of the Greek world from the Late Bronze Age to the Macedonian conquest. Open to seniors, juniors, and (by arrangement) sophomores. No knowledge of Greek is required. 3 s.h. (E)

ASSOCIATE PROFESSOR WAY

141, 142. GREEK ART.—(May be treated as two semester-courses.) Open to seniors, juniors, and sophomores. A comprehensive survey of the development of Greek architecture and Greek sculpture in all periods. Course 141 is opened by a preliminary account of Egyptian, Mesopotamian, and Aegean artistic backgrounds. Course 142 is devoted chiefly to Greek art of the greatest period with the main emphasis on sculpture, and may be elected independently of course 141. All lectures are fully illustrated by slides. No knowledge of Greek is required. 6 s.h. (E)

ASSOCIATE PROFESSOR WAY

201-202. GREEK TRAGEDY.—6 s.h. (W)

ASSOCIATE PROFESSOR TRUESDALE

DEPARTMENTAL MAJOR

Prerequisite: Greek 1-2.

Major Requirements: A candidate for a major in Greek must complete 24 semester hours, including the following courses: Greek 53-54, 105-106, 107-108, 117-118, and 131.

Related Work: Eighteen semester hours selected from at least two other departments subject to the approval of the Greek Department. Appropriate courses are chosen usually in Latin, Philosophy, Art, and English.

Graduates of Duke University may attend the American School of Classical Studies at Athens, Greece, without charge for tuition and are eligible to compete for the fellowships that are offered annually by the School. These consist of two fellowships in Greek archaeology and one in the language, literature, and history of ancient Greece, each with a stipend of \$2,000. They are awarded mainly on the basis of examinations held in the beginning of February of each year.

HEALTH AND PHYSICAL EDUCATION

TRINITY COLLEGE AND THE COLLEGE OF ENGINEERING

MR. CAMERON, DIRECTOR; PROFESSOR AYCOCK, DIRECTOR OF UNDERGRADUATE STUDIES AND SUPERVISOR OF FRESHMAN INSTRUCTION; ASSOCIATE PROFESSOR HARRISON; ASSISTANT PROFESSORS BLY, BRADLEY, COX, FALCONE, MONTFORT, AND PERSONS;
MESSRS. BUEHLER, COBB, AND DRAGO

REQUIRED PHYSICAL EDUCATION FOR MEN

A student must complete four semesters of physical education in order to fulfill graduation requirements.

All students are given a medical and physical examination before registration. Students who have physical handicaps must register in Corrective Physical Education. Students assigned to these classes will take work suited to their particular needs and capacities.

Students without defects will register in Physical Education 1 and 2 in their freshman year. The activities are selected from the following: Apparatus, combative games (fundamentals of basketball, soccer, volleyball), swimming and tumbling. Swimming is required each semester of freshman year.

After a student has completed Physical Education 1 and 2, he may complete his physical education requirement by electing and satisfactorily completing two courses

from the following individual and team sports: 51. Apparatus-Tumbling; 52. Badminton; 53. Basketball-Handball; 54. Boxing-Wrestling; 56. Swimming, advanced; 57. Tennis-Volleyball; 58. Golf.

For information concerning gymnasium uniforms see page 195.

ELECTIVES IN PHYSICAL EDUCATION

The courses listed below are arranged to meet the increasing demand for teachers who are qualified to coach and teach Physical Education. They are open for credit only to students in the High School Teaching Program. These students may elect 15 semester hours from courses in this group. Six semester hours may be elected from the courses listed under Special Methods in Physical Education and 9 semester hours may be elected from the courses listed under Theory and Practice in Physical Education. The courses should be selected with the advice of the Director of Undergraduate Studies in order to meet the needs of the individual.

SPECIAL METHODS IN PHYSICAL EDUCATION

163. **ATHLETIC COACHING IN SECONDARY SCHOOLS.**—Theory and practice in the fundamentals of coaching baseball and track. Prerequisites: courses 1 and 2. Open to juniors and seniors. Sophomores by permission only. 3 s.h. (w)
MESSRS. CHAMBERS AND PARKER

164. **ATHLETIC COACHING IN SECONDARY SCHOOLS.**—Theory and practice in the fundamentals of coaching football and basketball. Prerequisites: courses 1 and 2. Open to juniors and seniors. Sophomores by permission only. 3 s.h. (w)
MR. CAMERON AND STAFF

THEORY AND PRACTICE IN PHYSICAL EDUCATION

65. **HISTORY AND PRINCIPLES OF PHYSICAL EDUCATION.**—A study of the objectives and principles upon which physical education is based. The history of physical education is studied in order to show the changes in objectives, principles, and methods and as an aid in the interpretation of trends. Open to sophomores, juniors, and seniors. 3 s.h. (w)
PROFESSOR AYCOCK

172. **RECREATIONAL LEADERSHIP.**—Combative contests, games, mass athletics, supervision of community recreation. Open to juniors and seniors. Sophomores by permission only. 3 s.h. (w)
ASSOCIATE PROFESSOR HARRISON

182. **THE ADMINISTRATION OF HEALTH AND PHYSICAL EDUCATION IN SECONDARY SCHOOLS.**—Presents the everyday problems that arise in the experience of the teacher of health and physical education. Open to juniors and seniors. 3 s.h. (w)
ASSOCIATE PROFESSOR HARRISON

190. **PROTECTIVE PRACTICES IN PHYSICAL EDUCATION.**—A study of safety measures including training and first aid. Open to juniors and seniors. 3 s.h. (w)
MR. CHAMBERS AND ASSISTANT PROFESSOR MONTFORT

HEALTH EDUCATION

132. **SCHOOL HEALTH PROBLEMS.**—A course designed (a) to familiarize the teacher with school health problems such as physical screening, communicable disease prevention and control, healthful school environment; (b) to present methods and materials for health teaching in elementary and secondary schools. 3 s.h. (w)
PROFESSOR AYCOCK

WOMAN'S COLLEGE

PROFESSOR GROUT, CHAIRMAN AND DIRECTOR OF UNDERGRADUATE STUDIES; ASSISTANT PROFESSOR EDDY, SUPERVISOR OF FRESHMAN INSTRUCTION IN PHYSICAL EDUCATION;
ASSISTANT PROFESSOR UHRHANE, SUPERVISOR OF FRESHMAN INSTRUCTION
IN HEALTH EDUCATION; ASSOCIATE PROFESSORS BOOKHOUT AND
LEWIS; ASSISTANT PROFESSOR HOLTON; MRS. SMITH, MISS
SPANGLER, MISS WOODYARD, AND MRS. WRAY

A student must complete four semester hours of physical education in order to fulfill graduation requirements. Ordinarily work must be completed by the end of the sophomore year. Classes meet three times a week or the equivalent thereof.

Each semester is divided into two halves. In general, indoor activities are taught during the two winter half-semester and outdoor activities in the fall and spring.

Every student must take one course (half-semester) in dance and one in swimming if she is unable to pass the swimming test. The remaining work necessary to complete the requirement may be elected from the activities listed in this section.

All students are given a physical and medical examination upon entering and at intervals throughout their college course. Classes in individual physical education and light sports are arranged for those who should not take the more active work.

For information concerning gymnasium costumes see page 188.

SPECIAL FRESHMAN PHYSICAL EDUCATION

At the beginning of the year, after a series of tests has been given, each freshman is registered for the course she most needs, as determined by the test scores. Such courses as sport fundamentals, fundamentals of rhythm, beginning swimming and posture are offered for those who need to improve their skills in these areas. Students whose test scores are satisfactory will enroll in classes with the sophomores.

For freshmen, the winter half of the first semester consists of body mechanics twice a week and social hygiene once a week.

PHYSICAL EDUCATION ACTIVITIES

Individual and dual sports: Archery, badminton, bowling, diving, fencing, golf, life saving, light sports, riding, swimming, tennis, first aid, instructors' life saving and water safety.

Team sports: Basketball, hockey, softball, volleyball.

Rhythmic Activities: Ballroom dance, folk dance, fundamental rhythms, modern dance, square dance, tap dance.

Developmental Activities: Body mechanics, individual physical education, sport fundamentals, posture.

PHYSICAL EDUCATION THEORY

The courses listed in this section are open for credit to students preparing to teach physical education and health on a full-time or part-time basis. Courses open to students other than physical education majors are: Physical Education 102 and Health Education 112, required of all students in the Elementary Teaching Program; Physical Education 107, open for credit to students preparing for social group work and religious education; course 116, primarily designed for students in physical therapy and taught in that department; Physical Education 105-106, 114, and Health Education 41 and 62, open for credit to all students.

91. FIRST AID AND SAFETY IN PHYSICAL EDUCATION.—A study of measures which must be taken in the organization and teaching of physical education to insure maximum safety. The Standard Red Cross First Aid Course will be included. 2 s.h. (E) ASSOCIATE PROFESSOR BOOKHOUT

101. HISTORY AND PRINCIPLES OF PHYSICAL EDUCATION.—An historical survey of physical education stressing the relationship between the types of activity developed and the social and political ideals of different nations and periods. A study of the principles upon which physical education is based. Analysis of successful teaching in physical education. 2 s.h. (E) PROFESSOR GROUT

102. THE TEACHING OF PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS.—A study of methods and materials used in teaching physical education to children; includes discussion on the theory of physical education, and practice in teaching elementary school activities. Required of students in the elementary school teaching program. 3 s.h. (E) ASSOCIATE PROFESSOR LEWIS

103. GAMES AND RHYTHMS FOR CHILDREN—Required of students preparing for full-time teaching in physical education. 2 s.h. (E)
[Offered every other year alternating with P.E. 107.] ASSOCIATE PROFESSOR LEWIS

105-106. METHODS AND MATERIALS IN RECREATION.—A course intended to familiarize students with recreation activities and methods of organizing groups in these activities. Laboratory work includes practical leadership experience with a recreational club or group in a city organization. General fields covered are:

Social Activities, Music Activities, Folk and Square Dancing, Games and Sports, Arts and Crafts, Drama Activities. Open to juniors and seniors without prerequisite. A year course meeting five periods per week throughout the year. Students who have had 102 or 103 may take 106 without 105. 6 s.h. (E)

ASSISTANT PROFESSOR HOLTON

107. THE TEACHING OF RHYTHMIC ACTIVITIES.—Basic theory and practice in the methods of teaching various types of dance activities. 2 s.h. (E)

[Offered every other year alternating with P.E. 103.]

MRS. WRAY

113. MAMMALIAN ANATOMY.—A study of all organ systems with special emphasis on osteology, arthrology and myology. The cat serves as laboratory animal, but constant application is made to man. Prerequisite: Zoology 1 and 2. 4 s.h. (E)

ASSOCIATE PROFESSOR BOOKHOUT

114. KINESIOLOGY.—A study of muscle function. Analysis of fundamental movements with emphasis on the development of normal posture and efficient body movement. Required of students taking the major in physical education. Prerequisites: Zoology 1 and 2, and P.E. 113 or Zoology 53. 3 s.h. (E) (Not open to students who have had P.E. 116.)

ASSOCIATE PROFESSOR BOOKHOUT

116. KINESIOLOGY.—A study of muscle function. Analysis of human motion as a basis for therapeutic exercise. Prerequisite: Human Anatomy. 3 s.h. (w) (Not open to students who have had P.E. 114.)

ASSOCIATE PROFESSOR BOOKHOUT

117. BODY MECHANICS AND INDIVIDUAL PHYSICAL EDUCATION.—A study of the fundamentals of body movement and teaching methods for courses in body mechanics. An analysis of faulty postures for which individual physical education procedures are indicated. 3 s.h. (E)

ASSOCIATE PROFESSOR BOOKHOUT

119. ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION.—Curriculum building in physical education. The administration of class and intramural programs. Administrative problems such as budget, equipment, facilities, interschool athletics, legal aspects, and public relations. 2 s.h. (E)

PROFESSOR GROUT

181-182. METHODS AND MATERIALS IN PHYSICAL EDUCATION.—A course in the theory and practice of teaching and officiating in games and sports. Laboratory hours arranged to provide practice on the field and in the gymnasium. 6 s.h. (E)

ASSOCIATE PROFESSOR LEWIS AND STAFF

185. ADVANCED METHODS AND MATERIALS IN PHYSICAL EDUCATION.—A continuation of 181-182. Required of seniors preparing for full-time teaching in physical education. 2 s.h. (E)

ASSOCIATE PROFESSOR LEWIS AND STAFF

HEALTH EDUCATION

41. PERSONAL HEALTH.—A presentation of basic health information appropriate to the college age group. Emphasis is placed on the individual's responsibilities and potential contributions toward personal and family health. Either semester. 3 s.h. (E)

ASSISTANT PROFESSOR UHRHANE

62. COMMUNITY HEALTH PROBLEMS.—This course includes problems of health in community living such as environmental health hazards and their control, health problems specific to certain groups, and the place and contribution of official and non-official public health agencies. Emphasis is placed on the responsibility of each community member to recognize problems and to work together toward the goal of a mentally, physically and socially healthful community. 3 s.h. (E)

ASSISTANT PROFESSOR UHRHANE

112. SCHOOL HEALTH.—This course is designed to meet the needs of the classroom teacher. It deals with the organization and administration of the school health program; with modern principles of education as applied to health education; with basic health problems confronting the schools; and with methods and materials for teaching health education. Primarily designed for students preparing to teach in elementary schools and for physical education majors. Either semester. 3 s.h. (E)

ASSISTANT PROFESSOR UHRHANE

REQUIREMENTS FOR TEACHING HEALTH AND PHYSICAL EDUCATION IN PUBLIC SCHOOLS

The following requirements have been set up for students in the Teaching Program who wish to qualify as full-time or part-time teachers of Health and Physical Education. These requirements meet the standards of the North Carolina Department of Public Instruction for certification in Health and Physical Education and of most of the other states represented in the student body. Students preparing to teach in any state are advised to consult the department about specific requirements.

Prerequisites: Physical Education 91 and 101. Zoology 1-2.

Major Requirements: 23 s.h. including Physical Education 103, 107, 114, 117, 119, 181-182, 185, and Health Education 112.

Related Work: 17 to 19 s.h. Of these hours 8 must be in anatomy and physiology (P.E. 113, Mammalian Anatomy and Zoology 151, Principles of Physiology). Of the remaining hours work done in Department of Education leading to teacher certification is acceptable. Courses in Chemistry, Zoology, Sociology, Psychology, Art and Music are recommended.

DOUBLE TEACHING MAJOR IN BIOLOGY AND PHYSICAL EDUCATION

This is an optional plan for those physical education majors who wish to be certified in a second subject.

Prerequisites: as listed above.

Major Requirements: as listed above.

Related Work: Botany 1 must be taken in addition to the anatomy and physiology courses listed above. The following courses in the Department of Education should be taken: Education 103, 118, 215-216, and 276.

HISTORY

PROFESSOR CARROLL, CHAIRMAN; ASSOCIATE PROFESSOR PARKER, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR FERGUSON, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS ALDEN, CLYDE, CURTISS, HAMILTON, LANNING, MANCHESTER, AND WOODY; ASSOCIATE PROFESSORS HOLLEY, NELSON, ROPP, AND WATSON; ASSISTANT PROFESSORS ACOMB, COLTON, DECONDE, DURDEN AND STEVENS; DRS. HOLLYDAY, TISCHENDORF AND YOUNG

The undergraduate courses in history are designed to afford (1) an introduction to the study of history by a consideration of the history of the modern world; (2) a more intensive study of general American history; (3) opportunities for more advanced study of phases of American, English, European, Hispanic-American, Russian, and Far Eastern history.

Course 1-2 or 51-52 or E1-2 or an equivalent is a prerequisite for all other courses; course E1-2 is the prescribed course for students in the College of Engineering; courses 91 and 92 are prerequisite for all 100 and 200 courses in United States history. However, seniors with written permission from the instructor may take advanced American history courses without having had 91 and 92. Sophomores who took only one semester of course 1-2 in the freshman year may take courses 91, 92, 95, 96 or 99 concurrently with the second semester, provided they made a grade of B or above on the semester taken. Sophomores must obtain permission of the instructor in order to be admitted to courses numbered above 100; students who are not fully qualified sophomores will not be admitted to these courses. Courses for seniors and graduates are limited to twenty-five students; juniors may not elect them without special permission from the Department and the Executive Committee of the Graduate Faculty.

1, 2. HISTORICAL BACKGROUND OF THE WORLD TODAY.—This course is an introduction to the study of modern history with special reference to the issues in the modern world. Topics selected for emphasis are: the contest between liberty and authority in the modern state; changing economic organization and

theory—capitalism and the challenges to it; the problems of peace and war among the states; the changing faiths men live and die by. Beginning about 1500 with the rise of the European dynastic states, the story is pursued in the first semester to approximately 1871, and in the second through the two great world wars. The central theme in both semesters is the expansion of the influence of Western Europe throughout the world, with some attention to the rise of the United States as a world power. 6 s.h. (w & e)

Sophomore and juniors are not admitted to this course.

ASSOCIATE PROFESSORS FERGUSON, PARKER, AND ROPP; ASSISTANT PROFESSORS ACOMB AND COLTON; DRs. HOLLYDAY, TISCHENDORF AND YOUNG

E1-2. THE UNITED STATES IN THE WORLD TODAY.—This course is designed for students in the College of Engineering. Topics treated in the first semester are: the rise of national states in Western Europe and other factors attending the discovery and settlement of the New World; the foundation of American institutions; the establishment of the Federal Republic; the frontier, the westward movement, and contemporary international development; the Civil War; the growth of industry and its influence on society; the Spanish-American War and the emergence of the United States as a world power. In the second semester the emphasis is on the growing interdependence of the Western nations in the twentieth century; their influence throughout the world; the participation of the United States in the World Wars and the resultant problems of today. 6 s.h. (w)

ASSISTANT PROFESSOR DURDEN

51, 52. HISTORICAL BACKGROUND OF THE WORLD TODAY.—An introductory course for sophomores, juniors, and seniors dealing with the topics indicated in the description of course 1-2. 6 s.h. (w & e)

PROFESSOR CURTISS; ASSISTANT PROFESSORS ACOMB AND COLTON; DR. HOLLYDAY, TISCHENDORF, AND YOUNG

91. THE DEVELOPMENT OF AMERICAN DEMOCRACY TO 1865.—This course is a study of trends vital to an understanding of the United States today. The main theme is the development of American democracy. Problems of foreign policy, the growth of capitalism, political practices, social behavior, and conflicting ideals are considered in relation to this main theme. 3 s.h. (w & e)

ASSOCIATE PROFESSORS HOLLEY AND WATSON; ASSISTANT PROFESSORS DeCONDE, DURDEN, AND STEVENS

92. THE DEVELOPMENT OF AMERICAN DEMOCRACY, 1865 TO THE PRESENT.—A continuation of History 91 with emphasis upon the emergence of contemporary problems. 3 s.h. (w & e)

ASSOCIATE PROFESSORS HOLLEY AND WATSON; ASSISTANT PROFESSORS DeCONDE, DURDEN, AND STEVENS

Courses 91 and 92 are intended both to serve as continuation courses in the study of history and to afford the student an opportunity to gain the understanding of the past of the United States essential for intelligent citizenship. These courses are prerequisite for all 100 and 200 courses in United States history, but this prerequisite may be waived for seniors by written permission of the instructor.

95, 96. ANCIENT AND MEDIEVAL HISTORY.—An introductory study of the history of mankind from preliterate man through the development of the characteristic institutions of Western Europe. The first semester considers the prehistoric tribes, the early cultures of Mesopotamia and Egypt, the religious contribution of the Hebrews, and classical Greece and Rome. The second semester deals with Europe in the Middle Ages, from Constantine to Columbus, with emphasis upon institutional and cultural development. 6 s.h. (e)

DR. YOUNG

99. NAVAL HISTORY AND ELEMENTARY STRATEGY.—After a review of earlier periods, attention is given to the rise of sea-power and its importance in more recent times and to naval actions, especially in the two World Wars. This course is not open to students who have had N.S.101. 3 s.h. (w)

ASSOCIATE PROFESSOR ROPP

105, 106. **POLITICAL AND CONSTITUTIONAL HISTORY OF ENGLAND.**—The origins and evolution of the principal institutions of the English government, related to their setting in a changing society. 6 s.h. (w) PROFESSOR HAMILTON

107, 108. **SOCIAL AND CULTURAL HISTORY OF ENGLAND.**—A study of English history from the fourteenth century to the present time in an effort to arrive at a synthesis of social and political events and thus provide a background for the study of English literature. Emphasis is placed on the ages of Chaucer, Shakespeare, and Milton; the eighteenth and early nineteenth centuries; the reign of Victoria and the twentieth century. 6 s.h. (E) ASSOCIATE PROFESSOR FERGUSON

Sophomores who made an average grade of B or above on course 1-2 or EI-2 may be admitted to this course.

109, 110. **SOCIAL AND CULTURAL HISTORY OF EARLY AMERICA, 1607-1789.**—Principal areas covered are: immigration, economic pursuits, social structure, religion, and intellectual and cultural environment. 6 s.h. (w) PROFESSOR ALDEN

111, 112. **SOCIAL AND INTELLECTUAL HISTORY OF THE U. S.**—Evolution of American life and thought from the American Revolution to the present; an examination of attitudes and practices in such fields as science, industry, law, learning and religion. Lectures and class discussions of selected readings seek to illuminate the interplay of ideas and social institutions. 6 s.h. (w)

ASSOCIATE PROFESSOR HOLLEY

113, 114. **AMERICA IN THE TWENTIETH CENTURY.**—A historical survey of political, economic, and social problems of twentieth-century United States. Emphasis is placed on reform movements from the Muckrakers through the Fair Deal, the emergence of the United States as a world power, and conflicting ideas and ideologies. 6 s.h. (w)

ASSOCIATE PROFESSOR WATSON

115, 116. **THE AGE OF ABSOLUTE MONARCHY AND THE FRENCH REVOLUTION.**—The study in the first semester deals primarily with the political and social institutions of Western Europe in the seventeenth and eighteenth centuries, including such topics as the absolute monarchy in theory and practice, the peasants, the nobles, commercial and industrial classes, the Church. The study in the second semester includes the old regime in France, the French Revolution, and Napoleonic institutions in Western Europe. 6 s.h. (E)

ASSISTANT PROFESSOR ACOMB

[Not offered in 1957-58.]

119, 120. **SOCIAL MOVEMENTS AND SOCIAL THOUGHT IN MODERN EUROPEAN HISTORY.**—A survey of movements for social reform and change from about 1750 to the present. Emphasis is placed on the effects of industrialism, the rise of trade unions, the emergence of working class political parties, and the influence of revolutionary and reformist theories. 6 s.h. (w)

[Not offered in 1957-58.]

ASSISTANT PROFESSOR COLTON

121, 122. **THE FOREIGN RELATIONS OF THE UNITED STATES.**—This course deals with American foreign policy and with the ideas and movements which have affected it as the United States rose from colonial status to world power. The origins of American foreign policy, the Monroe Doctrine, Manifest Destiny, the Civil War, and the formal conduct of diplomacy are among the major topics of the first semester. The New Imperialism, the Open Door, World War I, the League of Nations, World War II, and the Korean conflict are among the topics in the second semester. 6 s.h. (w)

ASSISTANT PROFESSOR DECONDE

127. **HISTORY OF LATIN AMERICA THROUGH THE FORMATION OF THE NATIONAL GOVERNMENTS.**—3 s.h. (w) PROFESSOR LANNING

128. **INTER-AMERICAN AFFAIRS.**—This course treats the relations of the Latin-American states with each other and with the United States with the design of explaining the current significance of Latin America. Chief emphasis is placed upon social problems and movements common to all the republics and upon the role of the United States in Latin-American affairs, including such topics as American intervention; contributions of the United States to Latin-American life in such matters as public health; Pan-Americanism; Pan-Hispanism; foreign penetration and ideologies; the cultural and commercial aspects of the Good Neighbor Policy; Latin-American states in the World War. 3 s.h. (w) PROFESSOR LANNING

133, 134. THE AGE OF REVOLUTIONS, 1763-1830.—The great revolutions of the closing decades of the eighteenth century and the early decades of the nineteenth. While emphasis is placed on the French Revolution and Napoleon, attention is also given to the revolutions in the New World and to the underlying intellectual movement, the Enlightenment. 6 s.h. (w) ASSISTANT PROFESSOR ACOMB

135, 136.—EUROPE IN THE TWENTIETH CENTURY.—The work in the first semester deals with the period before 1920, including such topics as international relations at the beginning of the twentieth century, the rise of German naval power, the Triple Alliance and the Triple Entente, the economic interdependence of the world, the Turkish Revolution, the Turco-Italian War and the Balkan wars, the first World War, and its immediate aftermath. In the second semester such topics are treated as the rise of totalitarian states, the disruption of world trade, and the second World War. 6 s.h. (w) ASSISTANT PROFESSOR COLTON

153, 154. THE HISTORY OF THE SOUTH.—A study, beginning in the Colonial period, of the development of the Southern part of the United States with particular attention to its distinctive characteristics and institutions and to their influence in shaping Southern attitudes toward major questions of national policy. 6 s.h. (w) PROFESSOR WOODY

161, 162. RUSSIA FROM IVAN THE TERRIBLE TO PRESENT TIMES.—Topics treated include the rise of the Russian state and its relations with Poland and Turkey; the agrarian problem and the rise of industry; the Russian Revolution; the political, agricultural, and industrial policies of the Soviet Union; the role of the U.S.S.R. in World War II; and its postwar policies. 6 s.h. (w) PROFESSOR CURTISS

167, 168. THE BACKGROUND OF MODERN EUROPEAN CIVILIZATION.—The course deals with special topics in the intellectual-cultural history of the peoples of Europe and adjacent areas from the period of the earliest written records to the formation of the European states-system (c. 1648). The work aims to develop critical appreciation and maturity of judgment in historical interpretation through the use of original sources. 6 s.h. (E) ASSOCIATE PROFESSOR NELSON

FOR SENIORS AND GRADUATES

Students may receive credit for either semester of a hyphenated course at the 200-level without taking the other semester if they obtain written permission from the instructor and either the Director of Undergraduate or the Director of Graduate Studies.

201-202. SENIOR SEMINAR IN HISTORY.—A course designed to introduce qualified students to advanced methods of historical research and writing and to the appraisal of critical historical issues. Prerequisites: History 1-2 (or 51-52), 91-92, and the consent of the instructors. Open only to seniors. This course, when taken by a history major, would be in addition to the 6 semester hours required in 200-level courses of the History Department. 6 s.h. (w) ASSOCIATE PROFESSORS HOLLEY AND PARKER

203-204. THE UNITED STATES, 1850-1900.—The rise of sectionalism, secession, war-time problems of the Union and Confederacy, political and economic adjustments of Reconstruction, the status of the Negro, the New South, problems of capital and labor, the agrarian revolt, political parties and reform, the Spanish-American War. 6 s.h. (w) PROFESSOR WOODY

[Not offered in 1957-58.]

205-206. THE UNITED STATES IN THE TWENTIETH CENTURY.—The emergence of the United States as a major power: attention is focused on domestic developments and conflicting theories of expansion of federal power. Emphasis in the first semester is on the Progressive era and the first World War; the second semester is devoted to the twenties and to the Franklin Roosevelt administration. 6 s.h. (w) ASSOCIATE PROFESSOR WATSON

Not open to students who have had 113-114.

209-210. CONSTITUTIONAL HISTORY OF THE UNITED STATES, 1760 TO THE PRESENT.—A study of the basic problems in forming the Constitution;

of its development through the major crises in the history of the United States; of the effects of changing social, cultural, economic, and political conditions on the Constitution. 6 s.h. (w) ASSISTANT PROFESSOR STEVENS
[Not offered in 1957-58.]

213-214. THE OLD SOUTH.—Political thought and party trends from Jefferson to Calhoun; agriculture, slavery, expansion; commerce, manufacturing, transportation; urban life, religion, education; the rise of Southern nationalism. 6 s.h. (w) PROFESSOR WOODY

215-216. THE FOREIGN POLICY AND DIPLOMACY OF THE UNITED STATES.—The work in the first semester, covering the period 1775-1877, deals with such topics as the origin and development of basic foreign policies; isolation from Europe; paramount interests in Latin America, including the Monroe Doctrine; international co-operation in the Far East. The work in the second semester, covering the period since 1877, deals with topics such as the rise of the new "manifest destiny"; beginnings of American imperialism in Latin America and the Far East; the failure of traditional neutrality in the first World War; postwar conflicts between isolation and collective security; involvement in the second World War. 6 s.h. (w) PROFESSOR CLYDE

[Not offered in 1957-58.]

217, 218. EUROPE SINCE 1870.—International relations since the Franco-German War is the chief subject of study in this course; special emphasis is placed upon the underlying economic and political influences. 6 s.h. (w) PROFESSOR CARROLL

221-222. THE AGE OF THE RENAISSANCE.—The decline of characteristic features of medieval civilization and the rise of modern European institutions with particular attention to intellectual movements from Dante to Erasmus. 6 s.h. (E) ASSOCIATE PROFESSOR NELSON

225-226. THE AGE OF THE REFORMATION.—A survey of European civilization from 1500 through the Peace of Westphalia. 6 s.h. (E)
[Not offered in 1957-58.] ASSOCIATE PROFESSOR NELSON

227, 228. EUROPE IN THE NINETEENTH CENTURY.—A study, beginning with the career of Napoleon Bonaparte, of the forces and personalities influential in the nineteenth century. Emphasis in the first semester is on the problems of the biographer; in the second, on those of a student of national communities. 6 s.h. (w) ASSOCIATE PROFESSOR PARKER

231-232. THE HISPANIC COLONIES AND REPUBLICS IN AMERICA.—The development of the Iberian states as colonizing powers, the conquest of America, the Spanish treatment of the Indian, the contest between Spain and other European nations over America, the independence movement, the struggle for stable government, the rise of liberalism with special emphasis upon Mexico from the Revolution of 1910 to the present, and basic inter-American developments. 6 s.h. (w)
[Not offered in 1957-58.] PROFESSOR LANNING

233-234. THE INSTITUTIONAL, CULTURAL, AND SOCIAL HISTORY OF HISPANIC AMERICA.—The first semester of this course deals with subject races, the development of mixed breeds, the governmental system, the Church and the Inquisition, and Spanish culture with emphasis upon university subjects. In the second semester the work deals with the political ideas of the wars of independence, revolution and dictatorship, the rise of public education, public health, land reform, and proletarian movements. 6 s.h. (w) PROFESSOR LANNING

235, 236. EUROPEAN EXPANSION OVERSEAS (1415-1898). A course dealing primarily with the processes by which European institutions were carried overseas and modified in a new environment. In the first semester the emphasis is on Portuguese, Dutch, French, and English experience in the Far East and the Americas to 1763. In the second semester, attention is paid to the emergence of independent centers of European culture, as in Brazil, and to the revivals of mercantile imperialism of the new German, French, Italian and British empires of the nineteenth century. 6 s.h. (w) PROFESSOR MANCHESTER

241-242. THE FAR EAST.—The history of the Western impact on Eastern Asia in the nineteenth and twentieth centuries. Emphasis is placed on such matters as commercial and colonial expansion, the opening of China and Japan, the development by the Western Powers and Japan of colonial, imperialistic, and nationalistic interests, and the rise of Communist power in Asia. 6 s.h. (w) PROFESSOR CLYDE
[Not offered in 1957-58.]

243-244. THE UNITED STATES AND THE FAR EAST.—An historical analysis of American relations with the peoples of Eastern Asia during the nineteenth and twentieth centuries. 6 s.h. (w) PROFESSOR CLYDE

245-246. WAR IN THE MODERN WORLD.—This course is concerned with the relations between warfare and modern political, economic, and social conditions. Special attention is given to the development of British and American military methods and to the events of the American Civil War and the two World Wars. The work in the first semester deals with Clausewitz's theories of warfare and the period from the introduction of gunpowder to 1871; in the second semester there is a more detailed analysis of recent land, sea, and air warfare. 6 s.h. (w)
ASSOCIATE PROFESSOR ROPP

261-262. RUSSIA IN THE TWENTIETH CENTURY.—A study of the background of the Revolution of 1917 followed by an analysis of the history and policies of the Soviet state. 6 s.h. (w) PROFESSOR CURTIS

263-264. AMERICAN COLONIAL HISTORY AND THE REVOLUTION, 1607-1789.—The founding and institutional development of the English colonies; the background, progress, and results of the Revolution. 6 s.h. (w) PROFESSOR ALDEN

265, 266. THE WESTWARD MOVEMENT IN THE UNITED STATES.—Settlement from the Atlantic to the Pacific and beyond; frontier problems of colonization, land systems, economy, law and government; interactions of frontier and metropolis. The first semester emphasizes the West in the colonial period, Revolution, and formation of the union; the second semester stresses sectionalism, slavery, expansion and the Civil War, the modern West, and contemporary problems. 6 s.h. (w) ASSISTANT PROFESSOR STEVENS

267, 268. ENGLAND FROM EDWARD III TO ANNE.—The transition from medieval to modern England, the English Renaissance, and the political, social, and intellectual problems of the seventeenth century. 6 s.h. (w)
ASSOCIATE PROFESSOR FERGUSON

Not open to students who have had 107.

269. BRITISH HISTORY FROM 1714 TO 1867.—The interrelationship of the leadership of such men as Walpole, Chatham, Pitt, and Peel with war, revolution, and social institutions; the rise of the cabinet system; the Industrial Revolution; imperial changes; and reform. 3 s.h. (w) PROFESSOR HAMILTON

Not open to students who have had 105-106.

270. GREAT BRITAIN AND THE COMMONWEALTH OF NATIONS, 1867 TO THE PRESENT.—A history of Great Britain at the height of her world dominance and beyond, her oceanic empire, and the evolution of that empire into a unique world-wide Commonwealth of Nations. 3 s.h. (w) PROFESSOR HAMILTON

Not open to students who have had 105-106.

DEPARTMENTAL MAJOR

Prerequisites: The Introductory Course in History (1-2 or 51-52).

Major Requirements: Students desiring to take a major in history are required to elect 24 semester hours in the Department, including six semester hours in the senior year from courses in the 200 group. Students desiring to take the more advanced courses in American history should elect courses 91 and 92 in the sophomore or junior year.

COURSES APPROVED FOR RELATED WORK IN HISTORY

The number of courses refer to the description in the 1956-57 catalogue.

Aesthetics, Art, and Music: History of Art; History of Music

Economics, but not the courses listed under business administration and accounting except those in economic geography

Education, 83, 225, 253

English and American Literature, but not composition, speech, and drama

German, Greek, Latin, Russian, and the Romance Languages: the literature courses numbered 100 or above that are not primarily conversation or composition courses.

Greek 131

Latin 131-132

Philosophy, except 48

Political Science

Psychology, 206 only

Religion courses approved to satisfy the requirement in religion for graduation

Sociology 91, 92, 101, 243, 246 and courses groups I, II, IV, V.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

LATIN AND ROMAN STUDIES

PROFESSOR ROGERS, CHAIRMAN AND DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR ROSE, SUPERVISOR OF FRESHMAN INSTRUCTION; MR. SETTLE

Students who wish by study in English to make acquaintance with Roman antiquity from either a literary or an historical approach are afforded that opportunity through the courses in translated Latin Literature (111, 112), and Roman History (131, 132).

1-2. COURSE FOR BEGINNERS.—Forms, vocabulary, pronunciation and syntax are emphasized the first semester. They are followed by the reading and translating of Caesar's *Gallic War* the second semester. An effort is made to promote rapid development of ability to read easy Latin with satisfaction. 6 s.h. (w)

MR. SETTLE

3. CICERO'S ORATIONS.—Four orations including the *Manilian Law* and *Archias* are read, and attention is paid to prose style. Prerequisite: Latin 1-2, or equivalent. 3 s.h. (E)

MR. SETTLE

4. VERGIL'S *AENEID*.—Selections from Books I-VI, to the amount of four books or more, will be read and translated, due attention being paid to prosody. 3 s.h. (E)

MR. SETTLE

51. LATIN PROSE.—Selections from prose authors or Cicero's *De Senectute* and *De Amicitia*, or selected books of Livy's history, with special emphasis on developing competence in reading Latin. 3 s.h. (E)

THE STAFF

52. LATIN POETRY.—Selections from the greatest Latin poets, especially Horace's *Odes*. 3 s.h. (E)

THE STAFF

57. SIGHT READING IN CLASSICAL LATIN.—One period of an hour per week devoted to practice in the reading of Latin of the classical period; designed to train students to read with facility. 1 s.h. (E)

ASSOCIATE PROFESSOR ROSE

58. SIGHT READING IN MEDIAEVAL LATIN.—One period of an hour per week devoted to reading interesting mediaeval prose and poetry. Prerequisite: at least one of the following courses: Latin 3, 4, 51, 52, and 57, or an equivalent. 1 s.h. (E)

ASSOCIATE PROFESSOR ROSE

65-66. LATIN PROSE COMPOSITION.—Recommended to students who are pursuing course 3-4, 57, and 51-52, and may at the discretion of the instructor be required of such students. 4 s.h. (E)

ASSOCIATE PROFESSOR ROSE

101. TACITUS.—Interesting and historically important selections from the *Annals* or the *Histories* of Tacitus are read, with attention to the literary style and the value of the historical narrative. 3 s.h. (E) PROFESSOR ROGERS

102. JUVENAL.—Juvenal's literary satire forms the basis of the course. 3 s.h. (E) PROFESSOR ROGERS

103. CICERO.—Selections from one of the major philosophical works, with attention to Cicero's philosophical thought and literary style. 3 s.h. (E) PROFESSOR ROGERS OR ASSOCIATE PROFESSOR ROSE

104. LUCRETIIUS.—A study of Lucretius as a philosophical thinker and as a poetic artist. 3 s.h. (E) PROFESSOR ROGERS OR ASSOCIATE PROFESSOR ROSE

111, 112. ROMAN LITERATURE IN ENGLISH TRANSLATION.—Selective readings in Latin Literature in English translation with emphasis on the drama, lyric poetry, and the varied contributions of Cicero to literature in the first term, and upon the epic, the satire, and the novel in the second semester. (No language credit.) 6 s.h. (E) ASSOCIATE PROFESSOR ROSE

131, 132. HISTORY OF ROME.—A survey of the history of the Roman State from its beginnings to the death of Justinian; its expansion; development of its constitution and public administration; social, legal, political and economic problems of perennial life and interest; the background and setting of Christianity's rise and growth. (This course carries no language credit. No knowledge of Latin is required for admission.) 6 s.h. (E) PROFESSOR ROGERS

211-212. ROMAN ORATORY.—A reading course in the history and development of Roman oratory, based for the most part on Cicero's *Brutus* and the *Dialogus* of Tacitus. 6 s.h. (E) PROFESSOR ROGERS

DEPARTMENTAL MAJOR

Prerequisite: Latin 1-2, 3-4, or equivalent.

Major Requirements: 24 semester hours which must include courses 51-52, 101-102, 103-104, and 6 semester hours in courses at the 200-level.

Recommended Courses: Latin 65-66, Composition, and 131-132, Roman History.

Related Work: Eighteen hours of related work, elected usually in Greek, Philosophy, Art, Romance Languages, and English. Majors who contemplate graduate work are reminded of the necessity of Greek, German, and French for such study.

MATHEMATICS

PROFESSOR GERGEN, CHAIRMAN; PROFESSOR DRESSSEL, DIRECTOR OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR HICKSON, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS CARLITZ, ELLIOTT, ROBERTS, AND THOMAS; VISITING ASSOCIATE PROFESSOR CAMPBELL; ASSISTANT PROFESSORS GALLIE AND SHOENFIELD; DRs. BRAGG, CHAK, MCLEOD, MOHAT, PINKHAM, AND WARNER; MRS. BYRNES, MR. GOODE, AND MRS. STONE; AND ASSISTANTS

The following program of courses in Mathematics is planned for 1957-58. Fall: 1, 5, 6, 50, 51, 52, 53, 111, 123, 139, 235, 271, 285, 291. Spring: 1, 5, 6, 16, 50, 51, 52, 53, 124, 131, 140, 221, 236, 272, 286, 292.

1. INTERMEDIATE ALGEBRA.—Elementary topics, factoring, fractions, linear equations in one, two and three unknowns, functions and graphs, exponents and radicals, elements of quadratic equations. Prerequisite: one unit in algebra and one unit in geometry. 3 s.h. (W & E) STAFF

5. COLLEGE ALGEBRA.—Advanced topics in quadratic equations, systems involving quadratics, variation, binomial theorem, progressions, inequalities, theory of equations, determinants, partial fractions, probability. This course and Mathematics 6 may be taken concurrently. Prerequisite: Mathematics 1, or one and one-half units in algebra and one unit in geometry. 3 s.h. (W & E) STAFF

6. PLANE TRIGONOMETRY.—Logarithms, right and oblique triangles, radian measure, graphs of trigonometric functions, inverse trigonometric functions, trigonometric identities and equations. Prerequisite: must be preceded or accompanied by Mathematics 5. 3 s.h. (w & e) STAFF

16. MATHEMATICS OF INVESTMENT.—Simple and compound interest, annuities certain, amortization, sinking funds, depreciation, evaluation of bonds, life insurance. Prerequisite: Mathematics 5. 3 s.h. (w) STAFF

50. PLANE ANALYTIC GEOMETRY.—Rectangular and polar coordinates, loci, straight lines, conic sections. This course and Mathematics 51 may be taken concurrently. Prerequisite: Mathematics 5 and 6. 3 s.h. (w) STAFF

51. CALCULUS I.—Differentiation of elementary functions, curve tracing, maxima and minima, motion, curvature, indeterminate forms. Prerequisite: must be preceded or accompanied by Mathematics 50. 3 s.h. (w) STAFF

52. CALCULUS II.—Integration of elementary functions, areas, solids of revolution, length of arc, surfaces of revolution, centroids, moments of inertia, pressure. Prerequisite: Mathematics 51. 3 s.h. (w) STAFF

53. CALCULUS III.—Introduction to solid analytic geometry, partial differentiation, multiple integrals, series, introduction to differential equations. Prerequisite: Mathematics 52. 3 s.h. (w) STAFF

111. MATHEMATICAL ANALYSIS FOR ENGINEERS.—Ordinary and partial linear differential equations with constant coefficients, Fourier series and their applications, vectors. Prerequisite: Mathematics 53. 3 s.h. (w) STAFF

123. HIGHER ALGEBRA.—The number system, mathematical induction, inequalities, series, recurring series, continued fractions, recurring continued fractions, summation of series, probability. Prerequisite: Mathematics 53. 3 s.h. (w) ASSOCIATE PROFESSOR HICKSON

124. STATISTICS.—Averages, moments, dispersion, skewness, kurtosis, correlation, types of distributions, curve fitting, graduation of data to type curves, sampling theory. Prerequisite: Mathematics 53. 3 s.h. (w) STAFF

125. ELEMENTARY THEORY OF EQUATIONS.—Permutations, determinants, matrices, linear systems, polynomials and their roots, constructibility, resultants, discriminants, simultaneous equations. Prerequisite: Mathematics 53. 3 s.h. (w) PROFESSOR THOMAS

131. ELEMENTARY DIFFERENTIAL EQUATIONS.—Solution of differential equations of elementary types; formation and integration of equations arising in applications. Prerequisite: Mathematics 52. 3 s.h. (w) STAFF

139-140. ADVANCED CALCULUS.—Multiple integrals, series, Taylor's theorem, partial differentiation, improper integrals, line integrals, Green's theorem, complex numbers. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR ELLIOTT

158. FINITE DIFFERENCES.—Operators, interpolation formulas for equal and unequal intervals, inverse interpolation, summation, differential and difference operators, approximate integration. Prerequisite: Mathematics 52. 3 s.h. (w) STAFF

160. ELEMENTARY SOLID ANALYTIC GEOMETRY.—Planes, lines, quadric surfaces. Prerequisite: Mathematics 53. 3 s.h. STAFF

175. PROBABILITY.—Permutations and combinations, total and compound probability, Bayes' theorem, Bernoulli's theorem, mathematical expectation, applications. Prerequisite: Mathematics 52. 3 s.h. (w) STAFF

FOR SENIORS AND GRADUATES

221. NUMERICAL ANALYSIS.—The electronic computer, the art of calculation, and the analysis of error. The transition from physical reality to physical abstraction, to mathematical abstraction, to numerical abstraction to a numerical computing program. Numerical function theory, theory of approximation, approximate solution of equations, and numerical calculus. Prerequisite: Mathematics 53. 3 s.h. (w) ASSISTANT PROFESSOR GALLIE

227-228. THEORY OF NUMBERS.—Congruences, arithmetic functions, compound moduli, quadratic reciprocity, Gauss sums, quadratic forms, sums of squares. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR CARLITZ

229-230. ALGEBRAIC NUMBERS.—Ideals, unique factorization, divisors of the discriminant, determination of the class number. Prerequisite: Mathematics 125. 6 s.h. (w) PROFESSOR CARLITZ

235-236. ABSTRACT ALGEBRA.—Groups, fields, rings, matrices, quadratic and bilinear forms, general Galois theory, hypercomplex systems. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR CARLITZ

247-248. ARITHMETIC OF POLYNOMIALS.—Field theory, detailed study of finite fields, special polynomials and functions, valuation theory, the zeta function. Prerequisite: Mathematics 235, or consent of the instructor. 6 s.h. (w) PROFESSOR CARLITZ

253-254. DIFFERENTIAL GEOMETRY.—Curves and surfaces in three dimensional Euclidean Space, applicability, differential parameters, Riemannian geometry of n -space. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR THOMAS

255-256. PROJECTIVE GEOMETRY.—Postulational, synthetic treatment centering around Desargues' theorem and the principle of projectivity. Conics, coordinates, order, continuity, metric properties. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR THOMAS

261-262. MATHEMATICAL ANALYSIS FOR SOCIAL SCIENTISTS.—A development of basis concepts in mathematics, designed for advanced students in psychology, economics and other social sciences, having as objective for the student the understanding of the mathematical method and the acquisition of technical efficiency. Particular topics considered include mathematical systems, set theory, matrices, vectors, elements of the calculus, difference equations. Prerequisite: one year of college mathematics. 6 s.h. PROFESSOR GERGEN

271-272. INTRODUCTORY TOPOLOGY.—Topological properties of Euclidean spaces, set-theoretic and combinatorial methods. Prerequisite: Mathematics 53. 6 s.h. (w) ASSISTANT PROFESSOR SHOENFIELD

285. MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.—Vectors, line and surface integrals, tensors, complex variables, differential and integral equations. Prerequisite: Mathematics 53. 3 s.h. (w) PROFESSOR DRESSEL

286. MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.—Wave equation, Fourier series, heat equation, telegraphic equations, Legendre polynomials, Bessel functions, Schrödinger's equation. Prerequisite: Mathematics 53. 3 s.h. (w) PROFESSOR DRESSEL

291-292. THEORY OF FUNCTIONS.—Limits, implicit functions, power series, double series, Cauchy's theorem and its applications, residues, Riemann surfaces, conformal mapping. Prerequisite: Mathematics 53. 6 s.h. (w) PROFESSOR GERGEN

DEPARTMENTAL MAJOR

For the A.B. degree:

Prerequisite: Mathematics 5 and 6.

Major and Related Work: 42 semester hours.

Major Requirements: Mathematics 50, 51, 52, 53 and 12 semester hours in courses in mathematics numbered above 100.

Related Work: 18-24 semester hours of course work, ordinarily in the following departments: chemistry, economics and business administration, philosophy, physics. For the B.S. degree:

Prerequisite: Mathematics 5 and 6.

Major and Related Work: 48 semester hours.

Major Requirements: Mathematics 50, 51, 52, 53 and 12 semester hours in courses in mathematics numbered above 100.

Related Work: 14-24 semester hours of course work in the natural sciences.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

MEDICAL SCIENCE

These courses in medical science have been approved by the Faculty Council as appropriate for the Bachelor's degree.

109. ANATOMY RELATED TO MOTION.—A course in human anatomy in which the dissection is restricted to the muscles, bone, and joints and to the circulatory and nervous systems as they are related to movement. Limited to 24 students. Lectures and laboratory. Prerequisite: Zoology 1-2. 8 s.h.

PROFESSOR MARKEE AND STAFF

203. HUMAN PHYSIOLOGY.—A course in human physiology in which the functions of all organ systems are covered. Special emphasis is given to the study of neuro-muscular and cardiovascular functions. Lectures, laboratory experiments and demonstrations, and conferences. Limited to sixteen students. Primarily for physical therapy students. Prerequisites: Chemistry 1-2 and Zoology 1-2. 6 s.h.

ASSISTANT PROFESSOR WAYLAND HULL AND STAFF

NAVAL SCIENCE

PROFESSOR BASSETT, CAPTAIN, U. S. NAVY, CHAIRMAN; ASSOCIATE PROFESSOR MALINASKY, COMMANDER U. S. NAVY, DIRECTOR OF UNDERGRADUATE STUDIES; ASSISTANT PROFESSOR KLEIN, LIEUTENANT COMMANDER U. S. NAVY, SUPERVISOR OF FRESHMAN INSTRUCTION; ASSISTANT PROFESSORS BARRY, LIEUTENANT COMMANDER U. S. NAVY, BOWEN AND MAJESKY, LIEUTENANTS, U. S. NAVY; AND ASSISTANT PROFESSOR MORRISON, MAJOR U. S. MARINE CORPS

Standardized titles and numbers for courses are established by the Bureau of Naval Personnel for use at the 52 NROTC institutions. The first digit indicates the year of the course; the second digit indicates whether semester or quarter (0 for semester, 1 for quarter); the third digit indicates the semester or quarter of school year in which offered. Specialized courses for Marine Corps officer candidates are indicated by the letter "M" after the number, and substitute for the basic course of the same number.

NS 101. NAVAL HISTORY.—History of navy regulations, naval customs and courtesies considered basic to further study of Naval Science; naval history, relating the rise and fall of sea power to other aspects of world history as a basis for understanding the role of navies in the world today. 3 s.h. (w)

COMMANDER MALINASKY; LIEUTENANT COMMANDER KLEIN

NS 102. NAVAL ORIENTATION.—Introduction to carrier, air, surface, under-sea, and amphibious warfare; basic types, characteristics, capabilities, and limitations of naval vessels; deck seamanship; naval formations and maneuvers. 3 s.h. (w)

COMMANDER MALINASKY; LIEUTENANT COMMANDER KLEIN

NS 201. NAVAL WEAPONS.—Evolution of naval ordnance; types and properties of explosives; principles in design and assembly of guns and ammunition; gun assembly types and operation, capabilities and limitations of past, present and future weapons systems; principles and use of radar and radar systems; elements and principles in the problem of control of naval weapons against air and surface targets. 3 s.h. (w)

LIEUTENANT BOWEN

NS 202. NAVAL WEAPONS.—The elements of representative gun fire control systems; principles in the mechanical and electronic solution of fire control problems; principles in the alignment and maintenance of gun batteries; organization and functions of the combat information center; naval gunfire support of amphibious operations; principles and use of anti-submarine warfare devices and systems; principles of torpedoes, mines, rockets, and guided missiles. 3 s.h. (w)

LIEUTENANT BOWEN

NS 301. NAVAL ENGINEERING.—Principles of steam engineering as related to naval installations for main propulsion and auxiliaries; future trends in naval engineering plants, ship stability and buoyancy in the practice of ship design and damage control; a general understanding of Diesel Engines. 3 s.h. (w)

LIEUTENANT COMMANDER BARRY

NS 301M. EVOLUTION OF THE ART OF WAR.—A survey of the evolution of weapons, strategy, tactics and material; illustration of the classic principles of war by a study of selected battles and campaigns; a summary of the development of U. S. military and foreign policy. 3 s.h. (w)

MAJOR MORRISON

For Marine Corps Candidates.

NS 302. NAVIGATION.—Magnetic and gyro compasses; principles of chart construction; dead reckoning; piloting; nautical astronomy including a study of the actual and apparent motion of the earth, celestial coordinates, time systems, the astronomical triangle, identification of stars and planets; solutions of observations for lines of position; complete day's work in practical navigation. 3 s.h. (w)

LIEUTENANT COMMANDER BARRY

NS 302M. MODERN BASIC STRATEGY AND TACTICS.—Modern tactical principles and techniques, especially on the small unit level, illustrated by contemporary historical examples; development of a general understanding of strategy. 3 s.h. (w)

MAJOR MORRISON

For Marine Corps Candidates.

NS 401. NAVAL OPERATIONS.—Tactics and operations including concepts of combined fleet, force, and group operations; watchstanding duties afloat; relative motion and its application to tactical maneuvering; electronic navigation; communications from ship to ship through fleet levels; Rules of the Nautical Road. 3 s.h. (w)

CAPTAIN BASSETT; LIEUTENANT MAJESKY

NS 401M. AMPHIBIOUS WARFARE.—History and development of amphibious operations and organization; analyses of amphibious operations of World War II and of the Korean action. 3 s.h. (w)

MAJOR MORRISON

For Marine Corps Candidates.

NS 402. NAVAL ADMINISTRATION.—Structure of the Navy, organization and administrative procedures; principles of personnel management; elements of military law; leadership and personal relations. 3 s.h. (w)

CAPTAIN BASSETT; LIEUTENANT MAJESKY

NS 402M. AMPHIBIOUS WARFARE, PART II.—Further study of selected amphibious operations; Uniform Code of Military Justice; leadership. 3 s.h. (w)

For Marine Corps Candidates.

MAJOR MORRISON

REQUIREMENTS FOR COMMISSION

Naval Science: 24 semester hours.

Other university courses: Completion of course requirements to qualify for a baccalaureate degree, or higher. These courses must include Math 6 (unless math through trigonometry successfully completed in secondary school); Physics 1-2 or 41-42, to be completed by the end of the sophomore year (mandatory for Regular students only). Physical training must be taken in accordance with University requirements and each student must include such instruction in swimming as to qualify him as a first class swimmer.

Summer training: Regular NROTC students must participate in three periods of training on board ship or at naval shore stations. Contract students are required to take one training cruise of about six weeks' duration, normally between the junior and senior years.

PHILOSOPHY

PROFESSOR BAYLIS, CHAIRMAN; ASSISTANT PROFESSOR CLARK, DIRECTOR OF UNDERGRADUATE STUDIES; ASSISTANT PROFESSOR WELSH, SUPERVISOR OF FRESHMAN INSTRUCTION;
PROFESSORS NEGLEY AND PATTERSON; ASSISTANT PROFESSORS BUCK AND
PEACH; VISITING ASSISTANT PROFESSOR CASTANEDA

The undergraduate program in the Department of Philosophy is designed to acquaint students with the content and the structure of philosophical theory in

various areas. Discussion is encouraged so that the student can engage actively in the philosophical examination of problems.

Course offerings fall into two general categories: the systematic and the historical. In a systematic treatment, the organization of a course is primarily in terms of the problems presented by the subject-matter of that course, as in logic, ethics, metaphysics, etc. In historical courses, attention is directed more to the order of development in the thought of a particular philosopher (Plato, Aristotle, Kant, etc.), or in a historical period. In all courses, reading of the works of philosophers will acquaint the student with the important and influential contributions to the definition and solution of philosophical issues.

The problems raised in philosophy in respect to the various fields of the arts and sciences involve questions which are not normally given attention in those particular disciplines. In the consideration of such problems, therefore, it is expected that the student will acquire some understanding and perspective of the major areas of man's intellectual endeavor. In this sense, philosophical comprehension is an essential part of a student's learning and education.

The following courses fulfill minimum uniform requirements:

Literature, Art, Music, and Philosophy (six hours required)—Philosophy 49, 91, 93, 94, 97, 98, 117.

Natural Sciences (eleven hours required)—Three of the eleven hours may be fulfilled by Philosophy 48, 103, or 104.

48. LOGIC.—A study of the conditions of effective thinking and clear communication, and of typical sources of fallacies. Examination of the basic principles of *deductive* reasoning (making explicit the implications of statements) and of *inductive* reasoning (the formulation and testing of hypotheses on the basis of experience and experiment). Emphasis on practical illustrations and applications. 3 s.h. (E & W)
ASSISTANT PROFESSORS BUCK, CLARK, AND WELSH

49. ETHICS.—An introductory consideration of basic ethical concepts and principles as developed in European and American thought and culture. 3 s.h. (E & W)
PROFESSORS BAYLIS AND NEGLEY; ASSISTANT PROFESSORS BUCK AND WELSH

91. INTRODUCTION TO PHILOSOPHY.—A systematic and historical examination of the major problems of knowledge, morals, and metaphysics. 3 s.h. (E & W)
STAFF

93. HISTORY OF PHILOSOPHY; ANCIENT AND MEDIEVAL.—A study of the major philosophers of the period with special reference to the continuity of their thought. 3 s.h. (E & W)
PROFESSOR PATTERSON; ASSISTANT PROFESSOR BUCK

94. HISTORY OF PHILOSOPHY: MODERN.—A study of the major philosophers of the period with special reference to the continuity of their thought. 3 s.h. (E & W)
ASSISTANT PROFESSOR PEACH

97. POLITICAL AND SOCIAL PHILOSOPHY.—Discussion of the fundamental principles of political and social organization, with particular attention to democratic philosophy, corporate theory, and Marxist ideology. *Open only to sophomores and juniors.* 3 s.h. (W)
PROFESSOR NEGLEY

98. SOCIAL IDEALS AND UTOPIAS.—Reading of selected Utopias; analysis of the value-structures and political principles of these ideal societies. 3 s.h. (W)
PROFESSOR NEGLEY

101. PHILOSOPHY OF RELIGION.—A critical examination of the facts of religious experience and their bearing upon metaphysics. 3 s.h. (E)
PROFESSOR PATTERSON

103. SYMBOLIC LOGIC.—Detailed analysis of deduction and of deductive systems. 3 s.h. (E)
ASSISTANT PROFESSOR CLARK

104. PHILOSOPHY OF SCIENCE.—The principal philosophical and methodological problems in contemporary science. 3 s.h. (E)
ASSISTANT PROFESSOR CLARK

109. INTRODUCTION TO THE PHILOSOPHY OF LANGUAGE.—Examination and discussion of such problems as the origin of language, sign-using behavior, definition, the nature of interpretation, and special uses of language: scientific, poetic, persuasive. 3 s.h. (E)
ASSISTANT PROFESSOR WELSH

117. HISTORY OF ETHICS.—A survey and analysis of the ethical systems of the great philosophers. Readings in original sources. 3 s.h. (E)

ASSISTANT PROFESSOR WELSH

FOR SENIORS AND GRADUATES

202. PHILOSOPHY OF ART.—A study of some fundamental issues in aesthetics, with particular reference to the fields of literature, music, and painting. Problems discussed include: the nature and purposes of the arts; meaning in the arts; art and morality; the role of standards in art criticism; aesthetic judgment; interpretation and evaluation. 3 s.h. (E)

ASSISTANT PROFESSOR WELSH

203. CONTEMPORARY ETHICAL THEORIES.—Critical discussion and evaluation of the ethical views of twentieth century British and American philosophers. 3 s.h. (E)

PROFESSOR BAYLIS

205. THE PHILOSOPHY OF HISTORY.—Discussion of the method, metaphysical implications, and influence of interpretations of history: Hegel, Marx, Spengler, Toynbee. 3 s.h. (w)

PROFESSOR NEGLEY

208. POLITICAL PHILOSOPHY.—Analysis of the structure of social organization with particular reference to the nature of political and legal institutions. 3 s.h. (w)

PROFESSOR NEGLEY

210. PHILOSOPHY OF RELIGION.—A critical and constructive study of the nature of religion, of its various forms and manifestations, and of its functions in human life. 3 s.h. (E)

PROFESSOR PATTERSON

211. PLATO.—An examination of Plato's views with respect to knowledge, reality, and the state. 3 s.h. (E)

PROFESSOR PATTERSON

217. ARISTOTLE.—An analysis of Aristotle's views with respect to knowledge, reality, and the state. 3 s.h. (E)

PROFESSOR PATTERSON

218. MEDIEVAL PHILOSOPHY.—A study of the philosophy of the Middle Ages with special attention to selected texts from the works of Christian, Jewish and Arabian philosophers. 3 s.h. (E)

PROFESSOR PATTERSON

219. KANT.—Reading and discussion of his philosophy, with some attention to historical continuity. 3 s.h. (w)

PROFESSOR NEGLEY

220. THE POST-KANTIANS.—The development from Kant through Fichte and Schelling to Hegel; emphasis on the Hegelian dialectic and its influence on political and legal philosophy. 3 s.h. (w)

PROFESSOR NEGLEY

222. REASON AND COMMON SENSE IN 17TH AND 18TH CENTURY BRITISH THOUGHT.—Studies in the theories of reason and sentiment following Hobbes, and the development of opposition among rational, common sense and empirical theories of knowledge and conduct. Readings in Cumberland, Shaftesbury, Hutcheson, Reid and others. 3 s.h. (E)

ASSISTANT PROFESSOR PEACH

223. CONTEMPORARY PHILOSOPHY: IDEALISM.—Examination and analysis of the idealist position in recent and contemporary philosophy, with special attention to the works of F. H. Bradley and the British Idealists. 3 s.h. (E)

PROFESSOR PATTERSON

224. CONTEMPORARY PHILOSOPHY: REALISM.—A critical analysis, comparison and evaluation of the several varieties of recent realistic theories, presentative and representative. 3 s.h. (E)

PROFESSOR BAYLIS

225. BRITISH EMPIRICISM.—A critical study of the writings of Locke, Berkeley, and Hume, with special emphasis on problems in the theory of knowledge. 3 s.h. (E)

ASSISTANT PROFESSOR PEACH

227. CONTINENTAL RATIONALISM.—A critical study of the writings of Descartes, Spinoza, and Leibnitz, with special emphasis on problems in the theory of knowledge and metaphysics. 3 s.h. (E)

ASSISTANT PROFESSOR PEACH

228. RECENT AND CONTEMPORARY PHILOSOPHY.—A critical study of outstanding philosophical views from Schopenhauer to the present. 3 s.h. (E)

ASSISTANT PROFESSOR PEACH

229. AMERICAN PRAGMATISM.—Studies in the philosophy of Pierce, James, Dewey, and Meade. 3 s.h. (E)
ASSISTANT PROFESSOR WELSH

232. SPECIAL PROBLEMS IN THE PHILOSOPHY OF SCIENCE.—Selected topics concerning the methods of the sciences and the philosophy of science. 3 s.h. (E)
ASSISTANT PROFESSOR CLARK

236. ORIENTAL PHILOSOPHY.—A study of the genesis of philosophical ideas in the Upanishads and the Bhagavadgita, and of the developments of the orthodox systems and of the philosophies of the Jains and Buddhists. 3 s.h. (E)
PROFESSOR PATTERSON

250. PHILOSOPHICAL ANALYSIS.—A critical study of recent and contemporary essays in philosophical analysis, and an evaluation of the nature, methods, and results of this movement. 3 s.h. (E)
PROFESSOR BAYLIS AND ASSISTANT
PROFESSOR BUCK

252. METAPHYSICS.—A critical and evaluative study of rival metaphysical theories and their bases. Analysis of the fundamental metaphysical categories and of metaphysical methods. 3 s.h. (E)
PROFESSOR BAYLIS

291, 292. CRITICAL PHILOSOPHY.—The analysis of basic philosophical concepts and beliefs with a view to critical evaluation and constructive emendation of them. Emphasis on the practice as well as the principles of philosophical criticism and problem solving. 3 s.h. each. Enrollment only by permission of the department. 291 is ordinarily prerequisite for 292. (E)

PROFESSOR BAYLIS AND THE GRADUATE STAFF

DEPARTMENTAL MAJOR

Philosophy 48 (Logic) is recommended for all those intending to major in philosophy.

Major Requirements: Twenty-four semester hours in philosophy in courses numbered above 50 including the following:

Philosophy 93 and 94.

Philosophy 117, 203, or 208.

6 semester hours in Philosophy senior-graduate courses.

Related work: Six hours minimum in each of two departments approved by the Philosophy adviser. Courses may not be those primarily open to freshmen. There is no restriction in principle as to departments in which related work may be taken, and the approval of the Philosophy adviser is required only to insure some coherence in the program of major and related work as a whole.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

PHYSICS

PROFESSOR NIELSEN, CHAIRMAN; ASSOCIATE PROFESSOR LEWIS, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSOR CARPENTER, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS GORDY, NEWSON, AND SPONER; ASSOCIATE PROFESSORS FAIRBANK AND GREULING; ASSISTANT PROFESSORS BLOCK AND WILLIAMSON; VISITING ASSISTANT PROFESSORS BUCKINGHAM AND DUNCAN; DR. BERNSTEIN; AND ASSISTANTS

A student wishing to major in physics should arrange to complete the necessary mathematics as soon as possible.

1-2. INTRODUCTORY PHYSICS.—This course traces historically and experimentally the development of the important principles of physics. This course is open to freshmen, sophomores and juniors and meets the general science requirement. Three hours of recitation and one two-hour laboratory each week. 8 s.h. (w)
PROFESSORS CARPENTER AND NIELSEN; AND ASSISTANTS

41-42. GENERAL PHYSICS.—This course treats the basic principles of general physics in a more quantitative manner than Physics 1-2. It meets in a thorough way the physics requirement for entrance into the study of either medicine or engineering, and is well suited for the general science student. This course is not

open for credit for students who have completed Physics 1-2. Three lecture-recitations and one three hour laboratory period each week. Prerequisites: Mathematics 5-6 or equivalent (Mathematics 5-6 may be taken concurrently). 8 s.h. (w)

PROFESSOR CARPENTER, ASSISTANT PROFESSOR WILLIAMSON,
AND STAFF AND ASSISTANTS

75. MODERN PHYSICS.—The elements of atomic and nuclear physics. Kinetic theory, relativity, quantum theory, spectra, x-rays, radio-activity, cosmic rays. Prerequisites: Physics 1-2, or Physics 41-42, or equivalent; a course in differential calculus which may be taken concurrently. 3 s.h. (w)

ASSOCIATE PROFESSOR FAIRBANK

125. INTERMEDIATE PHYSICS—MECHANICS.—The course covers in a thorough manner the elements of mechanics. Three recitations per week. Prerequisites: Physics 1-2 or 41-42 or equivalent, and a course in differential and integral calculus. 3 s.h. (w)

PROFESSOR NIELSEN

126. INTERMEDIATE PHYSICS—ELECTRICITY.—The elements of electricity and magnetism. Three lectures and one three-hour laboratory per week. Prerequisites: Physics 125 or equivalent work approved by the instructor, and differential and integral calculus. 4 s.h. (w)

ASSOCIATE PROFESSOR GREULING

176. INTERMEDIATE PHYSICS—THERMODYNAMICS AND KINETIC THEORY.—The elements of thermodynamics and kinetic theory and elementary statistical mechanics. Three recitations per week. Prerequisites: Physics 125 or equivalent work approved by the instructor, and differential and integral calculus. 3 s.h. (w)

PROFESSOR NEWSON

A course in general college physics, Physics 125 and 126 or equivalent validated by examination, and a course in differential and integral calculus are prerequisites to all courses numbered 200 and above.

201-202. MECHANICS.—The fundamental principles of statics and the dynamics of particles and rigid bodies. Three recitations each week. 6 s.h. (w)

ASSISTANT PROFESSOR BLOCK

213-214. CONTEMPORARY PHYSICS.—A course which covers the fundamental concepts and the experimental basis of modern physics. Three lectures each week. 6 s.h. (w)

ASSOCIATE PROFESSOR LEWIS

217-218. ADVANCED PHYSICS LABORATORY.—Measurements involving the fields of mechanics, electricity, magnetism, heat, sound, optics and modern physics. 2-6 s.h. (w)

THE STAFF

219. ELECTRICITY AND MAGNETISM.—Fundamentals of electricity and magnetism. Physical optics. Electromagnetic waves. 3 s.h. (w)

ASSOCIATE PROFESSOR LEWIS

220. ELECTRON TUBE CIRCUITS.—Linear circuit analysis, rectifiers, filters, linear amplifiers, feedback, noise, power amplifiers, oscillators, modulation, relaxation oscillators. 4 s.h. (w)

ASSOCIATE PROFESSOR LEWIS

225-226. ELEMENTARY INVESTIGATIONS.—The aim of this course is to provide training in the laboratory and library methods of physical research. Properly qualified students may conduct elementary investigations under the supervision of a member of the staff. 3-6 s.h. (w)

THE STAFF

DEPARTMENTAL MAJOR

A. For the A.B. degree:

Prerequisites: Physics 1-2 or 41-42 or equivalent, and Mathematics 5-6.

Major Requirements: Eighteen to 24 semester hours in physics including Physics 75, 125, 126 and 176 or equivalent.

Related Work: Eighteen to 24 semester hours from the following courses: Mathematics 51, 52, 53 and 131, and Chemistry 1-2.

B. For the B.S. degree:

Prerequisites: Physics 1-2 or 41-42 or equivalent, and Mathematics 5-6 or equivalent.

Major Requirements: Twenty-four to 34 semester hours in physics including Physics 75, 125, 126 and 176 or equivalent.

Related Work: Fourteen to 24 semester hours from the following courses: Mathematics 51, 52, 53 and 131, and Chemistry 1-2.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

POLITICAL SCIENCE

PROFESSOR RANKIN, CHAIRMAN; PROFESSOR HALLOWELL, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSORS COLE, CONNERY AND WILSON; LECTURER ELLIS; ASSOCIATE PROFESSORS BRAIBANTI AND SIMPSON; ASSISTANT PROFESSORS CHEEK, HALL, HANSON AND LEACH; MESSRS. CLUTE AND SECOR

The general objective of the Department of Political Science is to acquaint students with the theory and practice of government and politics at the local, state, national and international levels. While primary attention is focused upon the American political and administrative system, emphasis is also placed upon a comparative study of the political institutions and movements of thought peculiar to the nations of Europe, Latin America and the Far East. The student's attention is also directed to the problems encountered in international organization, politics and law. The development of political theories from Plato to the present day is an essential part of the department's course offerings. Methods of study include the descriptive, the historical, the legal, the comparative and the philosophical.

Directing its effort to an intelligent understanding of the contemporary world and of the responsibilities which are laid upon citizens of a democracy, the Department of Political Science shares the general objectives of a liberal arts education. While the department does not aim at vocational education, the knowledge it seeks to impart should be useful to anyone contemplating a career in the government service or politics.

Students intending to major in the department should take Political Science 11-12 or 61-62. No student may take more than one of these two courses for credit. Ordinarily one of them must be taken before proceeding to more advanced work in the department. This rule may be waived with the consent of the instructor giving the advanced course.

The advanced courses are divided into three major groups but no sequence of courses beyond the introductory course is prescribed. The student would be well advised, however, to select some courses from each group.

The Senior Seminars are designed to provide an opportunity for majors in the department to pursue independent study and research.

INTRODUCTORY COURSES

11-12. THE AMERICAN SYSTEM OF GOVERNMENT.—An introductory study of the principles and operation of the American government in the light of the present world position of the United States. The first semester is devoted to institutions and politics of the American government; the second semester to such issues as civil liberties, American foreign policies and government policy toward agriculture, labor and business. (Only open to Freshmen.) 6 s.h. (E & W)

ASSISTANT PROFESSOR HALL

[Students who complete 11 in the spring semester should thereafter take course 62 instead of 12.]

61-62. AMERICAN AND COMPARATIVE POLITICAL SYSTEMS.—Principles and institutions of modern government, the first semester being devoted to American government, the second to a comparative study of governments in the United States and outside. 6 s.h. (E & W)

ASSOCIATE PROFESSOR SIMPSON; ASSISTANT PROFESSORS
CHEEK, HALL, HANSON AND LEACH

[Not open to freshmen or to students who have had courses 11-12 or 63-64.]

71. GOVERNMENT IN THE UNITED STATES.—Lecture and reading course recommended but not required for all students taking course 61. Open only to students enrolled in 61 and to sophomores who passed 11 in their freshman year. 1 s.h.
 PROFESSOR CONNERY AND SENIOR STAFF

72. COMPARATIVE GOVERNMENT.—Lecture and reading course recommended but not required for all students taking course 62. Open only to students enrolled in 62 and to sophomores who passed 11 in their freshman year. 1 s.h.
 PROFESSOR CONNERY AND SENIOR STAFF

POLITICAL THEORY AND COMPARATIVE GOVERNMENT

123. INTRODUCTION TO POLITICAL PHILOSOPHY.—A course devoted to the reading and discussion of selected political classics including Plato's *Republic*, Aristotle's *Ethics* and *Politics* and other works as time permits. 3 s.h. (w)
 PROFESSOR HALLOWELL AND ASSISTANT PROFESSOR LEACH

133. THE POLITICS OF SOUTHEAST ASIA.—An analysis of the development of government in Thailand, Vietnam, Burma, Malaya, Indonesia and the Philippines. Attention will be given to the Islamic, Buddhist and other indigenous cultures of these nations as well as to the colonial administrations of the Netherlands, France, Britain, and the United States. Emphasis will be on the problems involved in the emergence of various constitutional forms in these nations with the advent of independent statehood. 3 s.h.
 ASSOCIATE PROFESSOR BRAIBANTI

136. MAJOR EUROPEAN GOVERNMENTS.—A general introductory survey of the governments of Great Britain, France, Germany, Italy, and the Soviet Union. Special attention is given to constitutional developments, the organization and ideologies of political parties, and current political problems. 3 s.h. (w)
 PROFESSOR COLE

151. GOVERNMENTS AND POLITICS OF MEXICO AND THE CARIBBEAN AREA.—A study of their contemporary governments, political problems and international relations. 3 s.h. (w)
 DR. ELLIS

152. THE GOVERNMENTS AND POLITICS OF SOUTH AMERICA.—The constitutional development, governmental organization, inter-American co-operation and political problems of the principal South American states. 3 s.h. (w)
 DR. ELLIS

211. POLITICAL INSTITUTIONS OF THE FAR EAST.—An analysis of the ideas underlying the development of government in Japan, China, and Korea. Study of the writings of Lao-tse, Confucius and the sacred books of Buddhism and Shinto. Particular attention is given to the theory of Confucian bureaucracy, the Taikwa Reform, the development of the Tokugawa administrative state, the constitutional reforms of Sun Yat-sen in China and of the Meiji Era in Japan. 3 s.h. (w)
 ASSOCIATE PROFESSOR BRAIBANTI

223. POLITICAL THOUGHT TO THE SEVENTEENTH CENTURY.—A survey from the time of Plato to the close of the seventeenth century; Graeco-Roman, Patristic and Germanic thought; individualism and cosmopolitanism; effect of the Church-State controversy and the conciliar movement; medieval constitutionalism; legislative sovereignty. 3 s.h. (w)
 PROFESSORS WILSON AND HALLOWELL

224. MODERN POLITICAL THEORY.—An historical survey and philosophical analysis of political theory from the beginning of the seventeenth to the middle of the nineteenth century. Attention is given to the rise of liberalism, the Age of Enlightenment, the romantic and conservative reaction, idealism and utilitarianism. 3 s.h. (w)
 PROFESSOR HALLOWELL

225. COMPARATIVE GOVERNMENT.—A comparative study of modern political institutions and processes, with particular attention to European constitutional government and politics. 3 s.h. (w)
 PROFESSOR COLE

226. COMPARATIVE GOVERNMENT.—A comparative study of modern political institutions and processes, with particular attention to European totalitarian and authoritarian political systems. 3 s.h. (w)
 PROFESSOR COLE

229. RECENT AND CONTEMPORARY POLITICAL THEORY.—The rise of positivism and its impact upon modern political thought, the origins of socialism, Marxism and its variants, socialism in the Soviet Union, nationalism, Fascism and National Socialism, the crisis in modern democracy, Christianity and the social order. 3 s.h. (w)
PROFESSOR HALLOWELL

231. AMERICAN POLITICAL THEORY.—An analysis of the main currents in American political thought from colonial beginnings to the present day, with emphasis upon the development of liberalism in America. 3 s.h. (w)
PROFESSOR HALLOWELL

235. THE BRITISH COMMONWEALTH.—An analysis of the political relationships between the members of the Commonwealth and a comparative study of the governments of the Commonwealth countries, with particular reference to Canada. 3 s.h. (w)
PROFESSOR COLE

271. SOCIOPOLITICS AND CAPITALISM.—Labor and labor policies in Western Europe and the United States in the nineteenth and twentieth centuries; the development of monopoly power and political power of labor in recent decades. 3 s.h. (w)

AMERICAN GOVERNMENT AND PUBLIC ADMINISTRATION

125. AMERICAN POLITICAL PARTIES AND PRACTICAL POLITICS.—A study of the historical development, organization, and methods of political parties in the United States. 3 s.h. (w)
ASSOCIATE PROFESSOR SIMPSON

128. POLITICAL BEHAVIOR AND THE AMERICAN VOTER.—An analysis of the factors influencing Democratic, Republican, and independent voting behavior, citizen participation in elections, and the conduct of political campaigns. Emphasis will be placed upon the behavioral approach to political science. 3 s.h. (w)

141. PUBLIC ADMINISTRATION.—An introduction to the role of administration in the governmental process considering principles of administrative organization, methods of administrative control, personnel and fiscal management. In general the study of the organizational and administrative problems encountered by any government agency charged with carrying out a public policy. 3 s.h. (w)
ASSISTANT PROFESSOR HALL

146. LEGISLATION.—A study of the composition and structures of legislative bodies and of the legislative process with attention to procedure, methods, techniques, delegation of discretion, and the use of controls. 3 s.h. (w)
ASSOCIATE PROFESSOR SIMPSON

161. GOVERNMENT AND PLANNING.—A study of special areas in government planning. The semester's work is divided into three parts: city planning—land use and zoning, housing and urban redevelopment; resource planning—the governmental problems involved in planning for the conservation and use of natural resources, with special attention given to multi-purpose development of the river and its watershed, and a brief consideration of proposals and developments in the general field of economic planning. 3 s.h. (w)
ASSISTANT PROFESSOR HANSON

164. GOVERNMENT CONTROL OF THE SOCIAL AND ECONOMIC ORDER.—A study of governmental and administrative problems in the regulation of trade and the enforcement of the anti-trust laws, the regulation of transportation and communications and the role of the government in collective bargaining. Consideration is also given to the philosophic aspects of the general growth of government control of industry. 3 s.h. (w)
ASSISTANT PROFESSOR HANSON

174. POLITICS AND ECONOMICS.—An analysis of the influence of politically dominant forces and ideologies upon economic policies and of economics upon politics in societies of principal Western countries since the seventeenth century. 3 s.h. (w)

190. PUBLIC PERSONNEL ADMINISTRATION.—Principles, techniques, problems, and functions of government personnel administration; formal and informal organization for personnel management; comparison of public employment philoso-

phies, policies and services with general personnel management, including recruitment, promotion, training, classification, morale and discipline, compensation, and retirement of public employees. 3 s.h. (E) ASSISTANT PROFESSOR CHEEK

191. STATE AND LOCAL GOVERNMENT TODAY.—Problems in state, county and city government including the administration of government services such as education, public welfare, law enforcement; inter-governmental relationships; administrative reorganization; methods of popular control; and the reconstruction of state and local government so as to meet present-day needs. 3 s.h. (E)

ASSISTANT PROFESSOR CHEEK

207. AMERICAN CONSTITUTIONAL LAW AND THEORY.—A study of leading principles of American government, as developed through judicial interpretation of the Constitution. 3 s.h. (w)

PROFESSOR RANKIN

209. PROBLEMS IN STATE AND LOCAL GOVERNMENT IN THE UNITED STATES.—A study of the historical development of state and local governments, their present organization and subdivisions, and their relation to each other. Special attention is given to the position of the states in the federal union through the study of federal-state, inter-state, and state-local relations. 3 s.h. (w)

PROFESSOR RANKIN

230. AMERICAN POLITICAL INSTITUTIONS.—A study of the formation and development of institutions of the national government in the United States, with historical and analytical treatment. Among other topics this course is concerned with the Constitutional Convention of 1787, and the development of Congress, the Presidency, and the Supreme Court. 3 s.h. (w)

PROFESSOR RANKIN

234. CIVIL-MILITARY RELATIONSHIPS IN AMERICAN GOVERNMENT.—A consideration of the role of the military in American government both in theory and in practice. Special emphasis will be given to formal civil-military structural arrangements for determining policies, such as the National Security Council, and to the degree of civilian control within the military establishment. 3 s.h. (w)

PROFESSOR CONNERY

241. ADMINISTRATIVE MANAGEMENT.—An advanced course in public administration with special attention being given to the development of scientific management, its application to government in the United States and a consideration of current problems in organization, procedures, work simplification, and management improvement. 3 s.h. (w)

PROFESSOR CONNERY

242. NATIONAL ADMINISTRATION.—A study of the administrative organization, working concepts and procedures of the United States Government, illustrated through the operations of the Bureau of the Budget. 3 s.h. (w)

PROFESSOR CONNERY

246. GOVERNMENT ADMINISTRATION AND PUBLIC POLICY.—Through use of the laboratory and case study techniques, a consideration of the types of administrative problems that the United States Government encounters in the field of public policy, and their possible solution. 3 s.h. (w)

PROFESSOR CONNERY

291. PROBLEMS OF MUNICIPAL GOVERNMENT.—An analysis of problems relating to the structural system and activities of municipalities in the United States. 3 s.h. (w)

PROFESSOR RANKIN

292. MUNICIPAL ADMINISTRATION.—A study of principles and methods relating to municipal administration in the United States. 3 s.h. (w)

PROFESSOR RANKIN

INTERNATIONAL LAW AND RELATIONS

121. ELEMENTS OF INTERNATIONAL RELATIONS.—Analysis of international politics, of the foundations of national power, and of international cooperation, with emphasis upon attempted solutions of the central problems of international security. 3 s.h. (w)

DR. ELLIS

122. MODERN INTERNATIONAL POLITICS.—A survey of politics leading to the two World Wars with emphasis upon present day conditions resulting from these major conflicts. 3 s.h. (w)

DR. ELLIS

Students who have received credit for History 135-136 may not receive credit for this course.

131. SURVEY OF FAR EASTERN POLITICS.—An introductory survey of international politics in Eastern Asia and the Western Pacific; the rise of Japan as a modern state; China's struggle for political unity, independence and national development. 3 s.h. (Formerly Political Science 111) (w)

DR. ELLIS AND ASSOCIATE PROFESSOR BRAIBANTI

132. CONTEMPORARY PROBLEMS IN FAR EASTERN POLITICS.—The impact of World War II and its aftermath on political institutions and economic structures in the Pacific area. 3 s.h. (Formerly Political Science 112) (w)

DR. ELLIS AND ASSOCIATE PROFESSOR BRAIBANTI

158. CONTROL OF AMERICAN FOREIGN POLICY.—A consideration of the forces which are responsible for the formulation of American foreign policy, and a study of the important factors which have influenced contemporary United States policy in the major areas of the world. The course includes an analysis of the respective roles of the President, Congress, Department of State, and the United Nations, as well as military and public opinion. 3 s.h. (w)

212. INTERNATIONAL POLITICS OF THE FAR EAST.—An analysis of the relations of China, Japan and Korea *inter se* and with outside powers, with emphasis upon changing power relationships within the Asian cultural sphere. 3 s.h. (w)

ASSOCIATE PROFESSOR BRAIBANTI

221. INTERNATIONAL PUBLIC ORGANIZATION.—A study of the structure and functioning of the United Nations organs, of related specialized agencies such as the International Labor Organization, and of regional agencies such as the Organization of American States. 3 s.h. (w)

PROFESSOR WILSON

227-228. INTERNATIONAL LAW.—Elements of international law, particularly as interpreted and applied by the United States; rights and duties of states with respect to recognition, state territory and jurisdiction, nationality, diplomatic and consular relations, treaties, treatment of aliens, pacific settlement of disputes, international regulation of the use of force, and collective security. 6 s.h. (w)

PROFESSOR WILSON

UNDERGRADUATE SEMINARS

201. SENIOR SEMINAR IN POLITICAL SCIENCE.—A seminar intended primarily for majors in Political Science, devoted to the reading, discussion and analysis of major works in modern and contemporary political science. Students are expected to prepare papers on relevant topics for group discussions. Open only to seniors. Prerequisite: consent of the instructor. 3 s.h. (w)

PROFESSOR HALLOWELL

202. SENIOR SEMINAR IN POLITICAL SCIENCE.—Intended primarily for majors in Political Science, this seminar provides an opportunity for the application of principles to current political problems. It provides a means whereby specially qualified students can make a concentrated study of some problem of their own choice. Papers are required and special attention is given to research methods and materials. Political Science 201 is recommended but not required. Open only to seniors. Prerequisite: consent of the instructor. 3 s.h. (w)

PROFESSOR CONNERY

DEPARTMENTAL MAJOR

Prerequisite: Political Science 11-12 or 61-62.

Major Requirements: Eighteen semester hours of work in the Department above courses 11-12 or 61-62, including at least six semester hours of Senior-Graduate courses.

Related Work: Six hours each in two departments approved by the Political Science adviser. Courses may not be those primarily open to freshmen. Usually related work is taken in the Departments of History, Economics, Sociology, or Philosophy.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

PSYCHOLOGY

PROFESSOR RODNICK, CHAIRMAN; ASSOCIATE PROFESSOR KIMBLE, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSORS ADAMS, DAL, KOCH, KUDER, AND ZENER; ASSOCIATE PROFESSORS BANHAM, COHEN, GARMEZY, AND LODGE; ASSISTANT PROFESSORS BORSTELMANN, GUTTMAN, JONES, MCHUGH, PARSONS, REICHENBERG-HACKETT, SPIELBERGER AND WILSON; VISITING ASSISTANT PROFESSOR ZAHN; LECTURER STRONG

Three or six semester hours in psychology may be used to meet the Social Science and History requirement for the A.B. degree. The courses which will meet the requirement are: Psychology 91 or Psychology 91 plus either Psychology 100 or 101.

Psychology 91 or its equivalent is a prerequisite for all other courses in psychology. Six semester hours in psychology (including Psychology 91) or special permission of the course instructor or the director of undergraduate studies are required for admission to Psychology 144, 145, 148, 206, 212, 215, 229, 230, and 236.

91. INTRODUCTORY PSYCHOLOGY.—An introduction to the facts, principles, and problems of normal adult psychology through a study of psychological methods as applied to motivation, emotions, perception, sensation, thinking, memory, learning, individual differences, and personality. 3 s.h. (E & W) STAFF

100. PERSONALITY AND SOCIAL BEHAVIOR.—A survey of basic psychological principles underlying the study of personality in relation to the social environment. Among the topics discussed are theories of personality, the process of socialization of the individual, factors influencing adjustment to the social environment, the interaction of culture and personality. 3 s.h. (E)

PROFESSOR ADAMS, ASSISTANT PROFESSORS JONES AND REICHENBERG-HACKETT

101. INTRODUCTORY SOCIAL PSYCHOLOGY.—A survey of problems, concepts and methods in the study of social relations and group behavior. Topics to be discussed include: Psychological and socio-cultural factors in the development of motives, values and attitudes; the study of small-group behavior with emphasis on social influence and communication; prejudice and stereotyping. 3 s.h. (E & W)

PROFESSOR ADAMS, ASSISTANT PROFESSORS JONES AND MCHUGH

104. COMPARATIVE PSYCHOLOGY.—An examination of the bearing upon general psychological theory of experimental investigations of animal behavior in the fields of motivation and learning. 3 s.h. (E)

[Not offered in 1956-57.]

106. ABNORMAL PSYCHOLOGY.—A systematic presentation of the psychology of functional mental disorders with emphasis on its bearing upon general psychological theory. 3 s.h. (E)

ASSOCIATE PROFESSOR COHEN AND ASSISTANT PROFESSOR PARSONS

110. APPLIED PSYCHOLOGY.—Applications of psychology to problems of personnel selection, industrial efficiency, advertising and selling, and other problems of practical interest. 3 s.h. (E)

ASSISTANT PROFESSOR MCHUGH

111. ADVANCED GENERAL PSYCHOLOGY.—A more intensive study of several selected problem areas in the field of general psychology with special emphasis on experimental methods and findings in the areas considered. 3 s.h. (E)

[Not offered in 1956-57.]

116. PSYCHOLOGY OF ADJUSTMENT.—The course is planned to give an adequate understanding of problems of adjustment and mental hygiene. Lectures and discussions cover an application of the principles and findings of normal and abnormal psychology as these relate to the adjustment of the average individual in our changing society; a survey of the principles of mental hygiene; discussions of current socio-cultural trends significant for individual adjustment. 3 s.h. (E)

ASSISTANT PROFESSOR REICHENBERG-HACKETT

Not open to students who have had Education 68.

117-118. EXPERIMENTAL AND STATISTICAL METHODS IN PSYCHOLOGY.—Study of the procedures and methods of psychological investigation through emphasis on human and animal experimentation in such areas as learning, motivation and perception. Instruction in elementary statistical techniques and their application to the analysis and interpretation of psychological data. Experiments are arranged in a sequence of increasing complexity with respect to subject matter, experimental design and statistical methods. Laboratory and lectures. 8 s.h. (E)
ASSISTANT PROFESSORS GUTTMAN AND WILSON

121. CHILD PSYCHOLOGY.—A detailed study of the practical problems of infancy and early childhood, with special emphasis upon learning, emotional development, social adjustment, and modern conceptions and methods of child training and guidance. 3 s.h. (E)
ASSISTANT PROFESSOR McHUGH

Not open to students who have had Education 118.

122. ADJUSTMENT OF THE PRE-SCHOOL CHILD.—Study and application of techniques of observing, recording and interpreting the behavior of the pre-school child. The course is designed to meet the needs of students interested in the personality, development and social adjustment of children; to train them in techniques of observing and interpreting the physical, emotional, and intellectual development of the individual child; the role of each child within the social structure of a play group, and a study of the development of group integration. One hour lecture and 4 hours laboratory. 3 s.h. (E)

ASSISTANT PROFESSOR REICHENBERG-HACKETT

126. ADOLESCENT PSYCHOLOGY.—The mental, social, and emotional development of adolescence and youth will be studied, with special attention given to such topics as interests, motivations, home problems, sex differences, recreation, delinquency, and development for citizenship. Prerequisite: Psychology 121 or Education 118. 3 s.h. (E)
ASSISTANT PROFESSOR McHUGH

130. PRINCIPLES AND METHODS OF PSYCHOLOGICAL EVALUATION.—This is an introductory course in test methods used by psychologists in measuring and evaluating mental processes. The nature, purposes and utilization of various types of tests and psychological techniques will be discussed and demonstrated. Among the tests to be studied will be standard scales of intelligence, verbal and performance, individual and group methods; tests of special abilities, aptitudes, attitudes and interests; personality tests, rating scales and projective methods. 3 s.h. (E)
ASSOCIATE PROFESSOR BANHAM

132. THE PSYCHOLOGY OF INDIVIDUAL DIFFERENCES.—A study of the nature and causes of individual and group variations in intelligence, special abilities, social and emotional characteristics. These will be considered in relation to developmental sequence, aging factors, sex, race, biological inheritance, education and socio-economic conditions. 3 s.h. (E)
ASSOCIATE PROFESSOR BANHAM

141. PERSONALITY AND BEHAVIOR DISORDER.—Behavior disorder studied from the viewpoint of the psychological principles underlying the adjustment of the deviant personality. 3 s.h. (E)
[Not offered in 1956-57.]

144. LEARNING AND MOTIVATION.—A survey of the basic facts and principles of human and animal learning and motivation. Topics covered include conditioning, trial and error learning, insightful learning, primary and secondary motivation, the relationship between motivation and learning and cultural variations in motives. Students in the course will perform a series of representative experiments. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)
ASSOCIATE PROFESSOR KIMBLE

145. EXPERIMENTAL APPROACHES TO PERSONALITY.—Experimental methods applied to personality research with emphasis upon psychological studies in such areas as anxiety, conflict and frustration. Students will perform a series of representative experiments. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)
ASSOCIATE PROFESSOR GARMETZ AND ASSISTANT PROFESSOR JONES

146. EXPERIMENTAL PSYCHOLOGY IN INDUSTRY AND ENGINEERING.—Applications of psychological principles to the solution of problems in industry and engineering. Topics covered include visual and auditory communication, visibility and legibility, visual display, control design, machine design, motivational and learning factors influencing production. Representative studies will be reviewed. Students in the course will perform several pertinent experiments. 3 s.h. (E)

ASSISTANT PROFESSOR WILSON

148. PSYCHOLOGY OF PERCEPTION AND THINKING.—A study of the basic phenomena of perception and thinking as determined by the stimulus situation, motivation, learning and personality variables. Students will perform a series of representative experiments. Prerequisites: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

PROFESSOR ZENER

206. SOCIAL PSYCHOLOGY.—An examination of general methodology and selected research areas in social psychology including social perception, socialization, prejudice and the behavioral effects of communication, interaction and influence. 3 s.h. (E)

ASSISTANT PROFESSOR JONES

212. PHYSIOLOGICAL PSYCHOLOGY.—A survey of the interrelationships of biological and psychological factors in behavior, with particular reference to reflex action, motivation, learning and emotion. Emphasis will be placed on the relation between psychological theories and biological data. Presupposes Introductory Zoology or its equivalent. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

ASSISTANT PROFESSOR GUTTMAN

215. DEVELOPMENTAL PSYCHOLOGY.—Theory of personality structure and the changes it undergoes in development from infancy to old age, learning, conflict, character, intelligence, developmental crises, etc.; evaluation of researches on personality dynamics. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

PROFESSOR ADAMS

229, 230. INTRODUCTION TO RESEARCH.—A senior research seminar for advanced students. The student conducts an original investigation under staff supervision. A formal written report of the study will be required. Group discussions of significant research areas. Prerequisites: Participation by departmental invitation only; restricted to senior majors who have maintained a B average in all psychology courses. Students graduating with distinction in psychology will be selected from among registrants in this course. 6 s.h. (E)

ASSOCIATE PROFESSOR KIMBLE;

ASSISTANT PROFESSOR JONES

236. THEORETICAL PSYCHOLOGY.—This course will be devoted to the analysis of techniques of theory construction in psychology. The discussion of these methodological issues will be coordinated with the analysis of concrete formulations in contemporary psychological theory. Prerequisite: 6 s.h. in psychology or special permission of the instructor or the director of undergraduate studies. 3 s.h. (E)

PROFESSOR KOCH

242 and Education 242. MEASUREMENT OF APTITUDES, INTEREST AND ACHIEVEMENT.—A study of the theories and principles of psychological measurement as applied to aptitude, interest and achievement testing. Prerequisite: 12 hours of psychology or educational psychology (6 hours of which may be taken concurrently). 3 s.h.

PROFESSOR KUDER

DEPARTMENTAL MAJOR

Prerequisite: Psychology 91 or equivalent.

Major Requirements: 24 semester hours in psychology including: Psychology 91, 117-118; at least one course selected from Psychology 144, 145, and 148; at least one 200 level course.

Related Work: 12 semester hours of related work which usually includes courses in zoology and sociology or anthropology. Additional selected courses in chemistry,

economics, education, mathematics, philosophy and physics which may meet the minor requirement must have the approval of the director or undergraduate studies.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

RELIGION

PROFESSOR MYERS, CHAIRMAN; ASSOCIATE PROFESSOR PHILLIPS, DIRECTOR OF UNDERGRADUATE STUDIES; PROFESSOR CRUM; ASSOCIATE PROFESSOR PRICE; ASSISTANT PROFESSORS BRADLEY, MANSCHRECK AND SALES; DRs. DANIELS AND OSBORN; MESSRS. BROWN AND LANGFORD

The uniform course requirements in Religion may be fulfilled by completing six semester hours in any of the following courses: 1, 2, 51, 52, 91, 94, 101, 103, 104, 114, 130, 132, 135, 181, 182.

Specific prerequisites are indicated in the descriptions of some courses. Where prerequisites are stated in terms of Bible hours, any one of the following will satisfy a 3 semester hour prerequisite and any two, a 6 semester hour prerequisite: 1, 2, 51, 52, 101, 103, 104, 114.

1. THE ENGLISH BIBLE.—A survey of the contents of the Old Testament books in the light of their origin in the history and religion of the Hebrew people. 3 s.h. (E & W)

PROFESSOR CRUM; ASSISTANT PROFESSOR MANSCHRECK;
DRs. DANIELS AND OSBORN; MESSRS.
BROWN AND LANGFORD

2. THE ENGLISH BIBLE.—A study of the personalities and literature of the New Testament against their Jewish, Hellenistic and Roman background. Although Religion 1 is not a prerequisite, it will be an aid to the student to complete 1 before taking 2. 3 s.h. (E & W)

PROFESSORS CRUM AND MYERS; ASSISTANT PROFESSORS
MANSCHRECK AND SALES; DRs. DANIELS AND
OSBORN; MR. LANGFORD

51. THE ENGLISH BIBLE.—An introductory course in the Old Testament for sophomores and juniors. (See description of Religion 1.) Students may not receive credit for both 51 and 1. 3 s.h. (E & W)

PROFESSOR MYERS; ASSOCIATE PROFESSOR PHILLIPS;
ASSISTANT PROFESSORS BRADLEY AND MANSCHRECK;
DRs. DANIELS AND OSBORN; MR. LANGFORD

52. THE ENGLISH BIBLE.—A survey course in New Testament life and literature for sophomores and juniors. (See description of Religion 2.) It will be to the advantage of the student to take Religion 1 or 51 before taking 52. Students may not receive credit for both 52 and 2. 3 s.h. (E & W)

PROFESSOR MYERS; ASSOCIATE PROFESSOR PHILLIPS;
ASSISTANT PROFESSORS BRADLEY AND MANSCHRECK;
DRs. DANIELS AND OSBORN; MR. LANGFORD

91. AN INTRODUCTION TO CHRISTIAN ETHICS.—A study of the theistic interpretation of man's moral experience, based upon the world-view of the Bible, as contrasted with other classical and contemporary moral philosophies. In the survey of the ethical religion of the Bible special attention is given to the Hebrew prophets, to Jesus and the Apostle Paul. 3 s.h. (W)

DR. OSBORN

94. THE BEGINNINGS OF THE CHRISTIAN CHURCH.—A study of the development of Christianity in the first two hundred years. Special emphasis will be given to the work of Paul, the later New Testament writings, the *Apostolic Fathers* and the early Apologists. Prerequisite: Religion 2 or 52. 3 s.h. (W)

ASSISTANT PROFESSOR SALES

101. THE SOCIAL TEACHINGS OF THE PROPHETS AND JESUS.—A study of the social teachings of the Old Testament prophets and of the social ideas of Jesus as they appear in the four gospels. Not open for credit to students who take Religion 103 or 114. Either semester. 3 s.h. (W)

ASSOCIATE PROFESSOR PHILLIPS

103. THE PROPHETS OF THE OLD TESTAMENT.—In this course a study is made of the history and nature of prophecy, with particular attention being given to the messages of the outstanding pre-exilic literary prophets. Students may not receive credit for both 103 and 107 or 103 and 101. 3 s.h. (E & W)

PROFESSOR MYERS; ASSISTANT PROFESSOR SALES

104. JUDAISM FROM THE EXILE TO THE FALL OF JERUSALEM IN 135 A.D.—A study of post-exilic Judaism: the prophetic and apocalyptic developments of normative Judaism. 3 s.h. (W)

ASSISTANT PROFESSOR SALES

107. THE GREAT PROPHETS OF ISRAEL.—Special consideration will be given to the times and messages of Amos, Hosea, Isaiah, Jeremiah and Ezekiel. An effort will be made to appraise their contributions to literature, ethics, and faith. Some attention will be given to the relevance of prophetic religion for the present. Prerequisites: Religion 1, 2 or 51, 52 or equivalent. Students may not receive credit for both 103 and 107. 3 s.h.

PROFESSORS MYERS

114. THE LIFE AND TEACHINGS OF JESUS.—This course considers the period in which Jesus lived, the record of his life, and the meaning of his teachings as recorded in the Synoptic Gospels. Students may not receive credit for 114 and 101; or 114 and 116. 3 s.h. (E & W)

PROFESSOR MYERS; ASSISTANT PROFESSOR BRADLEY;
DRS. DANIELS AND OSBORN

116. THE MISSION AND MESSAGE OF JESUS.—An intensive study analyzing and interpreting the Gospel records of Jesus' career, with emphasis upon their significance for the Christian religion. Students will be expected to select and make reports on particular projects. Prerequisites: Religion 1, 2 or 51, 52 or equivalent. Students may not receive credit for both 114 and 116. 3 s.h. (W)

ASSOCIATE PROFESSOR PRICE; DR. DANIELS

130. CHRISTIAN ETHICS IN HISTORY AND MODERN LIFE.—A historical study of how Christians from New Testament times to the present have interpreted and expressed their ethical convictions. The aim of the course will be to provide historical depth for evaluating contemporary ethical issues. Prerequisite: Religion 91 or 3 s.h. of Bible. 3 s.h.

ASSISTANT PROFESSOR MANSCHRECK

132. THE CHRISTIAN AND CONTEMPORARY SOCIAL PROBLEMS.—A critique of some basic ideas of modern man as they affect ethical decisions. Special consideration will be given to problems of the social and economic structures of society, war and race. The aim of the course will be to encourage personal evaluation—using pertinent Biblical teachings and the views of contemporary writers as a basis for judgment. Prerequisite: Religion 91 or 3 s.h. of Bible. 3 s.h.

ASSOCIATE PROFESSORS PHILLIPS AND PRICE;
ASSISTANT PROFESSOR MANSCHRECK

134. CONTEMPORARY RELIGIONS IN THE UNITED STATES.—A study of Judaism, Catholicism and Protestantism with reference to each faith's distinctive beliefs and practices; and a comparison of common and dissimilar features. 3 s.h. (W)

ASSOCIATE PROFESSOR PHILLIPS

135. CHRISTIAN BIOGRAPHY.—A study of Christianity in the lives and writings of a few key persons, for example, Augustine, Francis of Assisi, Luther, and Wesley. The aim of the course is to present the central stream of the development of Christian thought and practice through the study of men who were significant in their own times and whose ideas are relevant to an understanding of current Christianity. Prerequisite: 3 s.h. of Bible. 3 s.h.

ASSISTANT PROFESSOR MANSCHRECK

169. CHARACTER PROBLEMS.—The psychology of adolescence and the problems of youth in character building, with attention to the character education agencies in local communities. 3 s.h. (E & W)

PROFESSOR CRUM

170. RELIGION AND THE FAMILY.—A study of marriage and American home life with emphasis upon ethical and religious aspects. Not open to students who take Sociology 250. 3 s.h. (E & W)

PROFESSOR CRUM

181. THE RELIGIOUS ENVIRONMENT OF THE BIBLICAL WORLD.—After a brief introduction to the nature and early development of religion, the history and literature of the religions of the ancient Near East are surveyed. Special attention is given to the cultures of Egypt, Mesopotamia, Babylonia, Persia, Palestine, and Greece. 3 s.h. ASSISTANT PROFESSOR BRADLEY

182. SURVEY OF THE WORLD'S GREAT RELIGIONS.—The world's living religions are dealt with in terms of the historical development and the beliefs, practices and contemporary significance of each. Prerequisite: 3 s.h. of Bible. 3 s.h. ASSISTANT PROFESSOR BRADLEY

185. THE NEGRO IN THE RELIGIOUS LIFE OF AMERICA.—An examination of the ways in which the Christian Church has attempted to apply the Christian ethic to race relations with attention to the ethical aspects of these relations in American life and culture. 3 s.h. PROFESSOR CRUM

192. CHRISTIAN BELIEFS.—An introductory study of the nature, significance and contemporary relevance of some of the important Christian beliefs. Prerequisite: 3 semester hours of Bible. 3 s.h. (E) ASSISTANT PROFESSOR BRADLEY

The following courses offered in the Divinity School may be taken by undergraduates:

103 (DS)-104 (DS). HELLENISTIC GREEK.—Designed for beginners to enable them to read the Greek of the New Testament. 6 s.h. MR. BROWN

201 (DS)-202 (DS). FIRST HEBREW.—The principles and structure of the Hebrew language with translation of selected Old Testament narratives. 6 s.h. PROFESSOR STINESPRING

207 (DS)-208 (DS). SECOND HEBREW.—II. Samuel in the first semester and Quamram Isaiah Scroll in the second. 6 s.h. ASSISTANT PROFESSOR BROWNLEE

DEPARTMENTAL MAJOR

Prerequisite: Religion 1-2 or 51-52.

Major Requirements: A major in the Department of Religion consists of 18 semester hours of work, exclusive of the introductory course, selected with the approval of the instructor under whose supervision the student does his major work. Six of the 18 semester hours must be in courses with biblical content.

Related Work: This is usually twenty-four semester hours, in courses that relate to the educational needs of the student. In general, it includes six semester hours in philosophy, psychology, and sociology. Other courses may be chosen from the offerings in art, education, English literature, health education, Greek, history, Latin and political science.

ROMANCE LANGUAGES

PROFESSOR JORDAN, CHAIRMAN; ASSOCIATE PROFESSOR DOW, DIRECTOR OF UNDERGRADUATE STUDIES IN FRENCH; PROFESSOR DAVIS, DIRECTOR OF UNDERGRADUATE STUDIES IN SPANISH; ASSISTANT PROFESSOR CORDLE, SUPERVISOR OF FRESHMAN STUDIES IN FRENCH; ASSOCIATE PROFESSOR FEIN, SUPERVISOR OF FRESHMAN STUDIES IN SPANISH; PROFESSORS CASTELLANO, FREDMORE, AND WALTON; ASSISTANT PROFESSORS GRANT, TORRE, AND VINCENT; DRs. AUBERY, MILLER, WALKER; MESSRS. BARLOW, BLANCHARD, FLINT, HARDEE, KAPLAN, STIRES, WATKINS; MMES. BRYAN, CASTELLANO, DOW, GILLETTE, HARTH

French 51-52 and Spanish 65-66 are the prerequisites for all elective courses. Some preparation in courses of the 100 level is prerequisite to election of courses above 200, except by special authorization of the department.

Students who, by reason of foreign residence, have had special opportunities in French or Spanish must be classified by the Director of Undergraduate Studies.

FRENCH

1-2. ELEMENTARY FRENCH.—Introduction to simple conversational patterns, elements of grammar, graded readings. 6 s.h. (E & W)

ASSISTANT PROFESSOR GRANT AND STAFF

3-4 INTERMEDIATE FRENCH.—The progressive development of skills in speaking, understanding, and reading. Prerequisite: French 1-2 or two years of high-school French. 6 s.h. (E & W)

ASSOCIATE PROFESSOR DOW AND STAFF

51-52. INTRODUCTION TO FRENCH LITERATURE.—Readings from representative French authors. Development of skill in rapid reading correlated with discussion in French of content and ideas. Prerequisite: French 3-4 or equivalent. 6 s.h. (E & W)

PROFESSOR WALTON AND STAFF

55. INTERMEDIATE CONVERSATION.—To be taken concurrently with French 51, except by departmental permission. Enrollment limited to 10 students per section. Recommended for prospective French majors. 1 s.h. (E) MRS. DOW

56. INTERMEDIATE CONVERSATION.—Prerequisite: French 55. To be taken concurrently with French 52. 1 s.h. (E) MRS. DOW

105. FRENCH COMEDY FROM MEDIEVAL FARCE TO BEAUMARCHAIS.—A study of the comic theater from the beginnings to eighteenth century satire, with special consideration of Molière. The course will trace the development of the French theatrical tradition, with its commentary on human nature and the contemporary scene. 3 s.h. (W) DR. WALKER

108. THE FRENCH ROMANTIC MOVEMENT.—The impact of the modern world on the French thinkers and great poets of the early nineteenth century. Readings from Rousseau; the eyewitness testimony of Chateaubriand; the lyric poetry of Lamartine, Vigny, Musset, and Hugo. 3 s.h. (W)

ASSISTANT PROFESSOR GRANT

111. FRENCH DRAMA OF THE NINETEENTH CENTURY.—A survey of the French theater from the romantic period to the *Théâtre libre*. 3 s.h. (E)

ASSOCIATE PROFESSOR DOW

112. FRENCH DRAMA OF THE TWENTIETH CENTURY.—Reading of representative plays selected from the works of Bernstein, Maeterlinck, Romain, Sarment, Vildrac, J.-J. Bernard, Claudel, Lenormand, Pagnol, Giraudoux, and Anouilh. 3 s.h. (E)

ASSOCIATE PROFESSOR DOW

117. PHONETICS.—This course is designed to satisfy the needs of majors and advanced students who wish to acquire greater accuracy in pronunciation and to examine its importance in the appreciation of literary texts. It involves a detailed review of French sounds, practice in phonetic transcriptions, tape recordings for corrective purposes, and an introduction to French diction. 3 s.h. (E)

MR. WATKINS

128. ADVANCED COMPOSITION AND CONVERSATION.—This course will maintain constant drill in the conversational idiom, along with exercises in free composition. Prerequisite: French 117 or consent of the instructor. 3 s.h. (E)

MRS. DOW

134. CONTEMPORARY FRENCH LIFE AND THOUGHT.—An introduction to the essential currents in French thought since 1885. Representative literary works are used as a basis for analysis and discussion of the contemporary scene. 3 s.h. (W)

ASSISTANT PROFESSOR CORDLE

213. FRENCH CLASSICISM.—Its initial phase. Readings from Malherbe, Molière, Racine, Boileau, La Fontaine, La Rochefoucauld, Madame de Sévigné, La Bruyère, and others. 3 s.h. (E)

PROFESSOR WALTON

214. FRENCH CLASSICISM.—Its final phase. Readings from Fontenelle, Saint-Simon, Abbé Prévost, Marivaux, Lesage, Montesquieu, Voltaire, and others. 3 s.h. (E)

PROFESSOR WALTON

215, 216. THE MODERN FRENCH NOVEL.—A survey of the novel form from the seventeenth to the twentieth century, with particular attention to the analysis of fundamental literary tendencies; classicism, rationalism, and realism. 6 s.h. (E)
PROFESSOR JORDAN

219, 220. OLD FRENCH LANGUAGE AND LITERATURE.—Reading and discussion of representative texts of the Medieval Period accompanied by a study of the evolution of the language. 6 s.h. (E)
ASSISTANT PROFESSOR VINCENT

227. FRENCH POETRY SINCE THÉOPHILE GAUTIER.—Readings from the principal figures of the Parnassian and Symbolist movements, including Baudelaire, Leconte de Lisle, Heredia, Verlaine, Rimbaud, Mallarmé, Régnier. 3 s.h. (E)
PROFESSOR WALTON

238. ANATOLE FRANCE.—Analysis of the principal phases of his work and its relation to the French tradition. Reading of his poetry, *Le Crime de Sylvestre Bonnard*, *Thais*, *Le Jardin d'Épicure*, *Les Dieux ont soif*, *Le Lys Rouge*, *L'Île des Pingouins*, part of *La Vie Littéraire*. 3 s.h. (E)
PROFESSOR WALTON

SPANISH

1-2. ELEMENTARY SPANISH.—Introduction to simple conversational patterns, elements of grammar, graded readings. 6 s.h. (E & W)
ASSOCIATE PROFESSOR FEIN AND STAFF

3-4. INTERMEDIATE SPANISH.—Progressive development of skills in speaking, understanding, and reading. Prerequisite: Spanish 1-2 or two years of high-school Spanish. 6 s.h. (E & W)
PROFESSOR FREDMORE AND STAFF

65-66. INTRODUCTION TO SPANISH LITERATURE.—Readings from representative Spanish authors. Development of skill in rapid reading correlated with discussion in Spanish of content and ideas. Prerequisite: Spanish 3-4 or equivalent. 6 s.h. (E & W)
PROFESSOR CASTELLANO AND STAFF

68. INTRODUCTION TO SPANISH AMERICAN LITERATURE.—Readings from representative Spanish American authors. Development of skill in rapid reading correlated with discussion in Spanish of content and ideas. This course is offered sometimes as an alternate to Spanish 66 and is accepted in fulfillment of major and graduation requirements. 6 s.h. (E & W)
PROFESSOR CASTELLANO AND STAFF

71. INTERMEDIATE CONVERSATION.—To be taken concurrently with Spanish 65, except by departmental permission. Enrollment limited to 10 students per section. Recommended for prospective Spanish majors. 1 s.h. (E)
MRS. CASTELLANO

72. INTERMEDIATE CONVERSATION.—Prerequisite: Spanish 71. To be taken concurrently with Spanish 66 or 68. 1 s.h. (E)
MRS. CASTELLANO

155. REPRESENTATIVE WRITERS OF SPANISH AMERICAN LITERATURE.—Reading and discussion of major works which illustrate literary trends from the early Colonial period to 1880. 3 s.h. (E)
ASSOCIATE PROFESSOR FEIN

156. REPRESENTATIVE WRITERS OF SPANISH AMERICAN LITERATURE.—Study of works which are examples of the principal literary currents after 1880, with particular reference to their relationship to social ideas and problems in the same period. 3 s.h. (E)
ASSOCIATE PROFESSOR FEIN

161. SPANISH LITERATURE: OLDER PERIOD.—Reading and interpretation of representative Spanish writers from the beginnings through the Golden Age. 3 s.h. (E)
DR. MILLER

162. SPANISH LITERATURE: MODERN PERIOD.—Reading and interpretation of representative writers from Romanticism to the present. 3 s.h. (E)
ASSISTANT PROFESSOR TORRE

167. THE SPANISH ROMANTIC MOVEMENT.—A study of the romantic spirit, especially in the drama and lyric poetry of the first half of the nineteenth century. 3 s.h. (E)
MR. FLINT

173. **ADVANCED CONVERSATION.**—One hour a week will be devoted to a review of the elements of syntax. The remainder of the course aims to develop facility of expression through constant drill on vocabulary and conversational idiom. Prerequisite: Spanish 66 (or 68) and 71-72, or permission. 3 s.h. (E)

PROFESSOR CASTELLANO

174. **PHONETICS AND DICTION.**—This course is intended to round out the students' oral experience, with emphasis on accurate pronunciation. Use is made of phonographic demonstrations and corrective exercises, with individual recordings. Prerequisite: Spanish 173, or permission. 3 s.h. (E)

PROFESSOR CASTELLANO

255. **MODERN LATIN AMERICAN LITERATURE.**—The coming of age of Latin American literature in the nineteenth and twentieth centuries, with particular attention to the Modernist movement. 3 s.h. (E)

ASSOCIATE PROFESSOR FEIN

256. **CONTEMPORARY LATIN AMERICAN LITERATURE.**—Trends in Latin American Literature after the Modernist movement. Analysis of significant works in various genres. 3 s.h. (E)

ASSOCIATE PROFESSOR FEIN

257. **OLD SPANISH LANGUAGE.**—The historical development of the language together with illustrative readings. 3 s.h. (E)

PROFESSOR DAVIS

258. **OLD SPANISH LITERATURE.**—The literature of the Middle Ages and the early Renaissance. 3 s.h. (E)

PROFESSOR DAVIS

260. **ADVANCED COMPOSITION AND SYNTAX.**—Study of fundamental difficulties in the language; practice in writing idiomatic Spanish; exercises in free composition. For students who have a satisfactory command of Spanish grammar and fair conversational ability. Prerequisites: Spanish 173, 174, or permission. 3 s.h. (E)

PROFESSOR CASTELLANO

261. **NINETEENTH CENTURY NOVEL.**—A study of literary and social trends in the last half of the nineteenth century. Readings will be selected from the novels of Valera, Pereda, Galdós, Pardo Bazán, Blasco Ibáñez, and their contemporaries. 3 s.h. (E)

PROFESSOR DAVIS

264. **MODERN AND CONTEMPORARY SPANISH THEATRE.**—A brief review of the modern and contemporary Spanish theatre from the period of Romanticism. Lectures, reading, and discussion of the most representative works of Benavente, Martínez Sierra, los hermanos Quintero, etc. 3 s.h. (E)

PROFESSOR CASTELLANO

265. **GOLDEN AGE LITERATURE: CERVANTES.**—The life and thought of Cervantes with special emphasis on his *Quijote*. 3 s.h. (E)

PROFESSOR PREDMORE

266. **GOLDEN AGE LITERATURE: THE DRAMA.**—Study of the chief Spanish dramatists of the seventeenth century with readings of representative plays of this period. 3 s.h. (E)

PROFESSOR CASTELLANO

270. **THE SPANISH LANGUAGE IN AMERICA.**—Development of the Spanish language from the time of the Discovery to the present. 3 s.h. (E)

PROFESSOR PREDMORE

275. **CONTEMPORARY SPANISH LITERATURE. ESSAY AND LYRIC POETRY.**—A study of the revision of national values and literary expression in the twentieth century with particular reference to the crisis of 1898 and to the enrichment of the Spanish tradition through extrapeninsular influences. 3 s.h. (E)

PROFESSOR PREDMORE

276. **CONTEMPORARY SPANISH LITERATURE: NOVEL.**—A study of tradition and innovation in the twentieth century Spanish novel and emphasis on the novels of Unamuno, Baroja, Valle Inclán, and Pérez de Ayala. 3 s.h. (E)

PROFESSOR PREDMORE

THE TEACHING OF ROMANCE LANGUAGES

RL218. **THE TEACHING OF ROMANCE LANGUAGES.**—Evaluation of objectives and methods; a study of the practical problems involved in teaching these languages on the elementary, secondary, and college level; analysis of textbooks, special foreign language programs, audio-visual aids; critical examination of modern techniques in written and oral testing. 3 s.h.

ASSOCIATE PROFESSOR DOW

DEPARTMENTAL MAJOR

Prerequisites:

For French: French 51-52 (combined with 55-56), or equivalent.

For Spanish: Spanish 65-66 (combined with 71-72), or equivalent.

Major Requirements:

For French: Eighteen semester hours of work must be completed in courses numbered above 100 and must include: (a) six semester hours in course 117, 128; (b) six semester hours of literature in courses 213 to 238.

For Spanish: Eighteen semester hours of work must be completed in courses numbered above 100 and must include: (a) six semester hours of linguistic training (courses 173, 174, 260); (b) six semester hours of literature in courses numbered above 200.

RELATED WORK

Majors in Romance Languages will normally take the prescribed amount of related work in the following fields: (1) other foreign languages and literature; (2) aesthetics; (3) history and appreciation courses in music and art; (4) philosophy; (5) general psychology; (6) history; (7) general sociology and anthropology.

Majors in Spanish may take a maximum of six hours of Spanish American political science or economics if taken with or after Spanish 155, 156.

RUSSIAN

ASSISTANT PROFESSOR WINNER AND VISITING ASSISTANT PROFESSOR NEBEL

51-52. INTRODUCTION TO THE RUSSIAN LANGUAGE.—Open to freshmen with the approval of the Dean. 6 s.h. (w)

ASSISTANT PROFESSORS WINNER AND NEBEL

53-54. INTERMEDIATE RUSSIAN LANGUAGE.—Prerequisite: Russian 51-52 or equivalent. 6 s.h. (w)

ASSISTANT PROFESSORS WINNER AND NEBEL

101, 102. RUSSIAN CULTURE AND LITERATURE THROUGH THE NINETEENTH CENTURY.—After a brief survey from earliest times through eighteenth-century classicism, enlightenment, and sentimentalism, attention is focused on the literature of the nineteenth century, and the development of romanticism and of the realistic school. Special attention is given to the works of Pushkin, Lermontov, Gogol, Goncharov, Turgenev, Tolstoi, Dostoevsky, and Gorki. Readings are assigned in English translation. 6 s.h. (w)

ASSISTANT PROFESSORS WINNER AND NEBEL

103. AN INTRODUCTION TO SOVIET LITERATURE AND CULTURE.—An analysis of the development of Russian literature and culture since the Bolshevik revolution and the effect of Soviet policy on the literary production of the time. A survey of the important literary currents from Gorki and Mayakovski through Sholokhov. Lectures and class discussion. Readings will be assigned in English translation. 3 s.h. (E)

ASSISTANT PROFESSOR WINNER

[Not offered in 1957-58.]

105. HISTORY OF THE RUSSIAN THEATRE AND DRAMA.—A discussion of the most significant stages of Russian dramatic art from the earliest primitive harvest ceremonies to the development of theatrical realism and naturalism in the end of the nineteenth century and the development of the dramatic arts in the Soviet Union is combined with a study of the development of the Russian theatre, with special emphasis on such figures as Stanislavski, Meierholdt, Vakhtangov, etc. Class discussion and visual demonstrations. Readings are assigned in English translation. 3 s.h. (w)

ASSISTANT PROFESSOR WINNER

[Not offered in 1957-58.]

112. PUSHKIN AND THE BIRTH OF RUSSIAN REALISM.—A study of Pushkin and his contemporaries from the point of view of their relationship to the development of the Russian romantic movement and to the emergence of an independent Russian realistic approach to literature. An analysis of the influence of Western literary figures, particularly Byron, on the development of Russian

letters of the early nineteenth century. Readings are assigned in English translation. Prerequisite: Russian 101 or consent of the instructor. 3 s.h. (w)

[Not offered in 1957-58.]

ASSISTANT PROFESSORS WINNER AND NEBEL

201, 202. THE NOVELISTS OF NINETEENTH CENTURY RUSSIA.—The principal writers discussed are Pushkin, Lermontov, Gogol, Goncharov, Saltykov-Shehedrin, Turgenev, Dostoevsky and Tolstoy. Discussion of the main cultural events of the period. Attention is given to the literary relations between Russia and the West. Extensive readings in English translation. Lectures, oral reports and term paper each semester. A knowledge of Russian is not required. 6 s.h. (w)

ASSISTANT PROFESSOR WINNER

SOCIOLOGY AND ANTHROPOLOGY

PROFESSOR JENSEN, CHAIRMAN; ASSOCIATE PROFESSOR SCHETTTLER, DIRECTOR OF UNDER GRADUATE STUDIES, AND SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS

HART AND THOMPSON; ASSOCIATE PROFESSOR LABARRE; ASSISTANT

PROFESSORS WHITRIDGE AND ROY; DRs. HOWELL AND

MCNURLEN, AND MISS BERSON

91-92. GENERAL SOCIOLOGY.—An introduction to the scientific study of social life; its origin, evolution and organization as illustrated in the study of a number of concrete social problems. 6 s.h. (E & W)

PROFESSOR JENSEN; ASSOCIATE PROFESSOR SCHETTTLER;

ASSISTANT PROFESSORS ROY AND WHITRIDGE;

DRs. HOWELL AND MCNURLEN

AND MISS BERSON

101. GENERAL SOCIOLOGY.—A more intensive version of course 91-92, which enables the student to complete the introductory course in sociology in one semester. 5 s.h. (w)

ASSISTANT PROFESSOR ROY

I. ANTHROPOLOGY

93. GENERAL ANTHROPOLOGY.—Origins and distribution of the races of mankind; a survey of human palaeontology and human biology, world archaeology, prehistory and languages; and the origins of the family, primitive economics, arts, social and political organization. Special attention is given to primitive peoples. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

94. CULTURAL ANTHROPOLOGY.—A study of the dynamics of culture, the causal factors, functions, integration and disintegration, diffusion, growth and change of cultures. Emphasis is upon the simpler societies. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

103. PEOPLES OF THE WORLD: AMERICAN INDIAN.—A comprehensive survey of the Indians of North and South America, including a study of origins and prehistory, archaeology, physical anthropology, languages, material culture, social and political organization, economics and religion, discussed in terms of the "culture area" concept, and illustrated with the ethnography of a characteristic tribe from each area. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

[Not offered in 1957-58.]

105. PEOPLES OF THE WORLD: AFRICA, ASIA, AND OCEANIA.—A comprehensive survey of non-European peoples of the Old World, covering available prehistory, archaeology, racial affiliations, languages, material culture, social and political organization, economics and religion, discussed in terms of the "cultural area" concept, and illustrated with the ethnography of a characteristic tribe from each area. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

212. PRIMITIVE RELIGION.—The ethnography, the social functions and the socio-psychological meanings of religion in primitive societies. Prerequisite: course 91-92, or 101, or 93 or 94. 3 s.h. (w)

ASSOCIATE PROFESSOR LABARRE

213. PERSONALITY AND SOCIETY.—The sociology and social psychology of human personality, its origins in the primary group, its nature and varieties, and

its integrations into secondary group institutions, with emphasis upon the normal personality and its adjustments in our society and to our culture. Prerequisite: course 91-92, or 101, or 93 or 94. 3 s.h. (w) ASSOCIATE PROFESSOR LABARRE

214. PERSONALITY AND CULTURE.—The influence of culture patterns and social institutions on character structure, socialization of the individual and the dynamics of human personality. Comparative anthropological materials will be drawn upon. Prerequisite: course 213. 3 s.h. (w) ASSOCIATE PROFESSOR LABARRE

II. COMMUNITY, RACE AND CULTURE

(Courses 91-92, or 101, or 93, or 94 prerequisite for all courses.)

133. SOCIOLOGY OF THE SOUTH.—The developing regional organization of the world economy studied with especial reference to Southern life and problems. A survey of the composition and distribution of population, races and race relations; economic conditions underlying population, race factors and culture of the South. Primary emphasis is upon social change and its control. 3 s.h. (w)

PROFESSOR THOMPSON

134. HUMAN ECOLOGY.—A study of the human community in its competitive and cooperative aspects. 3 s.h. (w)

PROFESSOR THOMPSON

[Not offered in 1957-58.]

137. THE NEGRO IN AMERICA.—A study of the history and changing status of the Negro regarded as a symbol and protagonist of minority groups in America and elsewhere. 3 s.h. (w)

PROFESSOR THOMPSON

233. RURAL SOCIOLOGY.—The sociology of the land; peasant and folk societies and cultures; patterns of rural settlement like the farm, the plantation, the ranch and others; rural personality types; the changing character of rural life; rural problems. 3 s.h. (w)

PROFESSOR THOMPSON

[Not offered in 1957-58.]

235. URBAN SOCIOLOGY.—A study of the city and civilization, the newspaper, the social survey, the slum and housing, neighborhoods and natural areas, urban institutions, urban problems, and city planning. 3 s.h. (w)

PROFESSOR THOMPSON

237. COMMUNITY AND SOCIETY.—This course seeks to provide a frame of reference for the analysis and ordering of facts pertaining to the diverse cultures of the world, the State, the world community, the Great Society, news, mass behavior, social problems, races and classes. 3 s.h. (w)

PROFESSOR THOMPSON

238. RACE AND CULTURE.—A study of the nature of race and of the relationships and problems of race. 3 s.h. (w)

PROFESSOR THOMPSON

262. EDUCATION AND THE CULTURAL PROCESS.—A study of education (1) as carried on traditionally among preliterate and folk peoples, and (2) as it becomes a problem in racially and culturally complex societies like that of the United States. 3 s.h. (w)

PROFESSOR THOMPSON

III. COLLECTIVE BEHAVIOR

(Courses 91-92, or 101, or 93 or 94 prerequisite for all courses.)

142. THE SOCIOLOGY OF DISCUSSION.—A course designed to develop practical social skills in intellectual cooperation. In the light of sociological theory of intellectual conflict, competition and cooperation, practice will be provided in the group solution of problems through committees, conferences and forums, and in the discussion processes whereby cooperation can be substituted for social antagonism. Prerequisites: either Sociology 91, 101, or 93, or 94 and six hours to be selected from history, political science, Economics 105 and 155, and Education 115 and 176. Enrollment limited to a maximum of 30. 3 s.h. (w) PROFESSOR HART

149. INTRODUCTION TO CHILD WELFARE.—A study of heredity and environment as factors in personality development: infant conservation; welfare responsibilities of the school, emphasizing the physical and mental well-being of the child, play, and compulsory and industrial education; child labor, diagnosis and treatment of delinquency; care of the dependent and neglected child; child-caring agencies, public and private; and a community program of child welfare. 3 s.h. (E)

PROFESSOR HART

243. SOCIAL ATTITUDES AND COLLECTIVE BEHAVIOR.—Study of attitudes as products of social interaction; organization of attitudes into personal behavior patterns; expression of social attitudes in social, political and industrial groups; social unrest and the behavior of crowds and mobs; analysis of social movements, strikes, revolutions, and other group organizations. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTLE

245. THE SOCIOLOGY OF PERSONALITY DISORGANIZATION AND ADJUSTMENT.—A sociological approach to the disorganization of personality with special emphasis upon the personality maladjustments resulting from different types of social situations, and the sociological techniques of personality reorganization and adjustment. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTLE

[Not offered in 1957-1958.]

246. PUBLIC OPINION AND PROPAGANDA.—Nature and development of public opinion; relation to attitude, biases, stereotypes and controversial issues; role of leaders, pressure groups and minority groups; use of radio, press, motion picture and graphic arts; propaganda and censorship; measurements of public opinion. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTLE

248. PRESSURE GROUPS AND PUBLIC RELATIONS.—A study of the nature and activities of pressure group organizations in the fields of business, industry, politics, education, religion, patriotism, etc., that seek to influence public opinion, with especial attention being given to the roles and functions of public relations counsellors and lobbyists. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTLE

[Not offered in 1957-1958.]

250. MARRIAGE AND THE FAMILY.—An analysis of contemporary marriage and family experience with emphasis on its functions, problems, resources and values. Not open to students who have received credit for Religion 170. 3 s.h. (w)

PROFESSOR HART

IV. SOCIAL ORGANIZATION AND DISORGANIZATION

(Courses 91-92, or 101, or 93, or 94 prerequisite for all courses.)

153. The FIELDS OF SOCIAL WORK.—A non-professional course, designed to acquaint the student with the types of problems existing in both rural and urban communities which can be dealt with in a remedial and preventive way; how they arise in the reciprocal interaction of personality and culture, what their effects are in terms of personal and social disorganization, how communities are organized to deal with them, and social agencies which have been developed to deal with problems of each type, together with an evaluation of effectiveness of the techniques employed. 3 s.h. (E)

ASSISTANT PROFESSOR WHITRIDGE

157. SOCIAL CHANGE AND SOCIAL CONTROL.—Basic nature of inventions as related to ideological and material factors; role of the inventor, reformer, and non-conformist; mobility, diversification and individualism as by-products of social change; techniques of social control in the family, school, church, industry and government; social planning and leadership in a dynamic society. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTLE

158. SOCIOLOGY OF THE PROFESSIONS AND OCCUPATIONS.—Analysis of the professional and occupational structure of the American economy; shifts and trends in occupations and professions for men, women and minority groups; social and economic characteristics of occupational and professional groups; factors in the selection of a profession or occupation; sources of information about occupations and professions; measurements of aptitudes, abilities and skills; employer-employee relationships. 3 s.h. (w)

ASSOCIATE PROFESSOR SCHETTLE

165. INTRODUCTION TO INDUSTRIAL SOCIOLOGY.—An analysis and appraisal of the various factors that affect human relations in industry. It will deal with the interpersonal and intergroup relationships within the individual industrial unit which determine its efficiency as an economic and social institution; the social relationships of workers with one another and with management; their influence upon productivity, the relations of the worker toward the job, labor turnover, absenteeism, etc., and the social conditions in the community, housing, family life; recreation, etc., as they affect the social relations within the industrial community. 3 s.h. (w)

ASSISTANT PROFESSOR ROY

166. INDUSTRY AND SOCIETY.—A study of industrial institutions in their interrelationships with other forms of social behavior in the broad cultural setting of western civilization. The emphasis in this course will be on an examination of the influence of changes in the technical and social organization of industry upon community organization, social stratification, social mobility, social interaction, and personality development. Attention will center upon analysis of specific social problems resulting from the impact of industrial change. 3 s.h. (w)

ASSISTANT PROFESSOR ROY

261. PROBLEMS IN INDUSTRIAL SOCIOLOGY.—Analysis of human relations problems that confront administrators of industrial institutions and leaders in community life. In this course emphasis falls on the examination of concrete case materials and appraisal of published research with consideration of possibilities for further development of scientific procedures in the field of industrial sociology. 3 s.h. (w)

ASSISTANT PROFESSOR ROY

271. SOCIAL PATHOLOGY.—A study of the causes, extent, significance, and constructive treatment of the principal forms of pathology in modern society; poverty, physical defectiveness, malnutrition, mental deficiency, mental disease, undirected leisure activities and unstandardized commercial recreation, alcoholism, prostitution, vagrancy, and delinquency. 3 s.h. (E)

PROFESSOR JENSEN

273. SPECIAL PROBLEMS IN SOCIAL PATHOLOGY.—Research projects in social and personal disorganization, limited to advanced students with the approval of the instructor. 1 to 3 s.h. *each semester*. (w)

PROFESSOR JENSEN

276. CRIME AND DELINQUENCY.—A study of the original tendencies of man and the problem of socializing these tendencies; the relations of physical and mental defectiveness and untoward influence in the home and neighborhood to crime; the development of criminological theory and procedure, emphasizing penal and reform methods, and specially modern methods of social treatment and prevention of crime. 3 s.h. (E)

PROFESSOR JENSEN

V. SOCIAL THEORY

(Course 91-92, or 101, or 93 or 94 prerequisite for all courses.)

286. SOCIAL ETHICS.—A study of sociological fundamentals underlying ethics, including the controversy between materialistic and idealistic social thinkers, the nature of personalities and of social organization, the nature of social values, types of social interaction and their effects upon general social values, underlying principles and facts of social change, and the bearings of all these upon certain social problems. 3 s.h. (w)

PROFESSOR HART

288. CONTEMPORARY PROBLEMS IN CULTURAL LAG.—An exploration of such sociological problems as social evolution, cultural lag, conflict, accommodation, leadership, and social reform, in relation to the crisis of civilization, precipitated by the development of the atomic bomb and by kindred discoveries and inventions. 3 s.h. (w)

PROFESSOR HART

VI. METHODS OF SOCIAL RESEARCH

(Course 91-92, or 101, or 93 or 94 prerequisite for all courses.)

191. PRINCIPLES OF SOCIAL CASE INVESTIGATION.—A non-professional course designed to acquaint the student with the basic research techniques employed in the case study of the interrelationships of personality and culture in various fields of sociological and anthropological interest. 3 s.h. (E)

ASSISTANT PROFESSOR WHITRIDGE

193. BASIC STATISTICAL METHODS IN SOCIOLOGY.—The processes of definition, classification, measurement, tabulation, association, correlation, comparison of averages and of percentages, prediction, preparation and interpretation of tables and charts, as applied to and illustrated by sociological data. One lecture, one recitation and three laboratory hours. 3 s.h. (w)

PROFESSOR HART

292. STATISTICAL TECHNIQUES IN SOCIOLOGY.—Intended for graduate students, and for undergraduates who are ready to undertake original statistical research projects. 3 s.h. (w)

PROFESSOR HART

293. SPECIAL PROBLEMS IN SOCIAL STATISTICS.—Applications of statistical techniques to specific research topics. Limited to advanced students with permission of the instructor. 1 to 3 s.h. *each semester.* (w) PROFESSOR HART

DEPARTMENTAL MAJOR

Prerequisite: Sociology 91-92 or 101.

Major Requirements: Eighteen semester hours of work in the Department in addition to Sociology 91-92 or 101, including at least six semester hours in Senior-Graduate courses.

Related Work: A minimum of eighteen semester hours, at least twelve of which are normally chosen from two of the following fields: economics, education, history, political science and psychology. Additional courses in health and physical education, philosophy and religion may also be elected as related work when indicated by the educational requirements of the student and approved by the departmental adviser. But not more than six hours work in courses primarily open to Freshmen may be counted toward this requirement.

ZOOLOGY

PROFESSOR WILBUR, CHAIRMAN; ASSOCIATE PROFESSORS BAILEY AND ROBERTS, DIRECTORS OF UNDERGRADUATE STUDIES; ASSOCIATE PROFESSOR HUNTER, SUPERVISOR OF FRESHMAN INSTRUCTION; PROFESSORS BOOKHOUT, GRAY AND SCHMIDT-NIELSEN;
ASSOCIATE PROFESSOR HORN; ASSISTANT PROFESSORS
LIVINGSTONE, NACE, SANDEEN, VERNBERG
AND WARD; DR. MATURO

1. ANIMAL BIOLOGY.—The principles of biology as applied to animals. 4 s.h. (w & e) ASSOCIATE PROFESSORS HUNTER AND ROBERTS; ASSISTANT PROFESSOR SANDEEN AND STAFF

2. GENERAL ZOOLOGY.—A brief survey of the animal kingdom. Prerequisite: Zoology 1. 4 s.h. (w & e) PROFESSOR BOOKHOUT; ASSOCIATE PROFESSOR HUNTER; ASSISTANT PROFESSOR VERNBERG AND STAFF

53. COMPARATIVE VERTEBRATE ANATOMY.—A study of the anatomy and evolution of the organ systems of vertebrates. Prerequisites: Zoology 1, 2. 4 s.h. (w) ASSOCIATE PROFESSOR HORN AND STAFF

71. HEREDITY AND EUGENICS.—Effects of environment and heredity upon the individual and populations; interpretation of human genetic histories. Prerequisite; one year of zoology. 3 s.h. (w) ASSISTANT PROFESSOR WARD

92. GENERAL EMBRYOLOGY.—A study of the fundamental principles of embryology as illustrated in the frog, chick and mammal. Prerequisite: Zoology 53. 4 s.h. (w) ASSISTANT PROFESSOR NACE AND STAFF

109. EVOLUTION.—The facts and theories of organic evolution. Prerequisite: two years of zoology. 3 s.h. (w) ASSISTANT PROFESSOR VERNBERG

110. INTRODUCTION TO GENETICS.—The principles and practical applications of genetics as applied to animals. (Primarily for majors in zoology.) Prerequisite: two years of zoology or consent of instructor. 4 s.h. (w) ASSISTANT PROFESSOR WARD

120. ORNITHOLOGY.—Lectures, laboratory and field trips dealing with the classification, adaptations, and natural history of birds. Prerequisite: one year of zoology. Zoology 53 recommended. 4 s.h. (w) ASSOCIATE PROFESSOR BAILEY

151. PRINCIPLES OF PHYSIOLOGY.—An introductory survey of physiological functions. Prerequisites: At least a year of zoology and a year of chemistry. 4 s.h. (w) PROFESSORS SCHMIDT-NIELSEN AND WILBUR

156. VERTEBRATE HISTOLOGY.—The microscopic structure of normal tissues and organs of the vertebrate body. Training will be given in the preparation of material for microscopic study. Prerequisite: Zoology 53. 4 s.h. (w) ASSOCIATE PROFESSOR ROBERTS

161. ANIMAL PARASITES.—An introductory course dealing with biological principles involved in parasitism of animals including man. Prerequisite: one year of zoology. 4 s.h. (E) ASSOCIATE PROFESSOR HUNTER

193. FUNDAMENTALS OF ZOOLOGY.—The principles involved in the study of structure, function, ecology, genetics, classification, and evolution of animals. An elementary course without laboratory designed for senior students. Not open to students who have had previous courses in zoology. Not a prerequisite to any zoology course. 3 s.h. (w) ASSISTANT PROFESSOR VERNBERG

196. SEMINAR: CURRENT DEVELOPMENTS IN ZOOLOGY.—Prerequisites: Zoology 53 and 92. Open only to seniors. 2 s.h. (w) STAFF

FOR SENIORS AND GRADUATES

204. ADVANCED PARASITOLOGY.—Lectures, readings, and laboratory work, dealing with practical and theoretical problems of classification, morphology and host relations of animal parasites. Offered in alternate years. Prerequisite: Zoology 161. 4 s.h. (E) ASSOCIATE PROFESSOR HUNTER

216. LIMNOLOGY.—A study of lakes, streams, and ponds including their classification, photosynthetic productivity, geochemistry, physical patterns, pollution, fisheries, and significance as microcosms. Lectures, field trips, laboratory work. Prerequisites: Chemistry 1, 2, and a year of biology. 4 s.h. (w) ASSISTANT PROFESSOR LIVINGSTONE

219, 220. SPECIAL PROBLEMS.—Senior majors who have had proper training may be permitted to carry on special work. Permission must be obtained from the Director of Undergraduate Studies and the instructor under whom the student wishes to work. Not more than 4 s.h. (w & E) STAFF

222. ENTOMOLOGY.—A study of anatomy, physiology, embryology, and classification of insects. Offered in alternate years. Prerequisite: One year of zoology. 4 s.h. (w) PROFESSOR GRAY

224. VERTEBRATE ZOOLOGY.—A study of life histories, adaptations, ecology and classification of vertebrate animals. Offered in alternate years. Prerequisite: Zoology 53. 4 s.h. (w) PROFESSOR GRAY

238. SYSTEMATIC ZOOLOGY.—The fundamental theory and practice involved in the collection, identification, and classification of animals. Offered in alternate years. Prerequisites: Zoology 1, 2. 4 s.h. (w) ASSOCIATE PROFESSOR BAILEY

245. RADIATION BIOLOGY.—An introductory course which deals with the basic physical, chemical, and biological principles upon which the study of the biological effects of radiation is based. It consists of four sections: Radiation Physics, Radiation Cytogenetics, Radiation Biochemistry, and Radiation Physiology. Laboratory work using various radiation sources and a number of organisms give an opportunity to investigate these principles at first hand. Prerequisites: Mathematics through trigonometry, college physics, inorganic and organic chemistry. 4 s.h. (w)

252. COMPARATIVE PHYSIOLOGY.—The physiological mechanisms of animals studied on a comparative basis. Prerequisite: Zoology 151 or equivalent. 4 s.h. (w) PROFESSOR SCHMIDT-NIELSEN

253. ADVANCED VERTEBRATE MORPHOLOGY.—Descriptive and experimental studies in comparative vertebrate morphogenesis. Lectures, readings, reports and laboratory. Prerequisites: Zoology 53, 92. 4 s.h. (w) ASSOCIATE PROFESSOR HORN

271. CELLULAR PHYSIOLOGY.—The physiological processes of living matter approached through studies of cells and tissues. Prerequisites: two years of biology and at least one year of chemistry. 4 s.h. (w) PROFESSOR WILBUR

274. INVERTEBRATE ZOOLOGY.—A study of structure, functions, and habits of invertebrate animals under normal and experimental conditions. Field trips will be made to study, collect, and classify animals in their natural habitats. Offered in alternate years. Prerequisites: Zoology 1, 2. 4 s.h. (w) PROFESSOR BOOKHOUT

276. PROTOZOOLOGY.—The morphology, physiology, taxonomy, and culture of protozoa. Offered in alternate years. Prerequisites: Zoology 1, 2. 4 s.h. (w)

PROFESSOR BOOKHOUT

278. INVERTEBRATE EMBRYOLOGY.—Lectures, readings and laboratory work dealing with rearing, life history and development of invertebrates. Offered in alternate years. Prerequisite: Zoology 92. 4 s.h. (w)

PROFESSOR BOOKHOUT

For summer courses in Marine Biology consult the Bulletin of the Duke University Marine Laboratory.

DEPARTMENTAL MAJOR

Prerequisites: Zoology 1 and 2.

Major Requirements (for both A.B. and B.S. degrees): A minimum of 24 s.h. of zoology including courses 53, 92, 151 or 271.

Related Work: At least one year of chemistry; additional work usually chosen from courses in botany, chemistry, geology, mathematics and physics.

Language Requirements: For A.B. degree: Preferably German or French. For B.S. degree: Both German and French.

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

Courses of Instruction College of Engineering



CIVIL ENGINEERING

PROFESSOR ROWE, CHAIRMAN; PROFESSOR WILLIAMS; ASSOCIATE PROFESSOR PALMER;
ASSISTANT PROFESSORS ARGES, GARDNER, HAINES, PETERSON, AND
THARP; MESSRS. HARRAWOOD AND TANER

CE 51. CIVIL ENGINEERING FUNDAMENTALS.—An introductory to engineering procedures and methods. The history and scope of civil engineering. Prerequisite: Engrg 1, Math 5 and 6. 1 s.h. (w) PROFESSOR ROWE

CE 61. SURVEYING I.—Use of instruments; transit, stadia and compass surveying; differential and profile leveling; setting grade stakes; calculations of bearings, latitudes, departures and areas; methods of plotting; mapping based on transit-tape and stadia surveys; determination of azimuth by solar and stellar observations; care and adjustment of instruments. Prerequisite: Engrg 1 and Math 6. 4 s.h. (w) ASSISTANT PROFESSOR ARGES AND MR. HARRAWOOD

CE 62. SURVEYING II.—Topographic surveying using stadia and plane table; rural and urban land surveys; public land system; grading plans and earthwork quantities; triangulation. Introduction to photogrammetry. Prerequisite: CE 61. 2 s.h. (w) ASSISTANT PROFESSORS ARGES AND PETERSON

CE 108. *ADVANCED STRENGTH OF MATERIALS.—Applications of Mohr's circle, deflections, and energy of strain to advanced problems. Prerequisite: Engrg 107. 3 s.h. (w) ASSISTANT PROFESSOR GARDNER

S 110. PLANE SURVEYING.—The equivalent of CE 61 given especially for students in forestry. See Bulletin of Summer Session. 4 s.h. (w) ASSISTANT PROFESSOR ARGES

CE 113. ROUTE SURVEYING.—The calculation and laying out of simple, compound, and easement curves; widening of curves; vertical curves; setting slope stakes; ordinary earthwork computations and mass diagrams. Prerequisite: CE 61. 2 s.h. (w) PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR THARP

CE 116. HIGHWAY ENGINEERING.—Location, design, construction and maintenance of highways and city streets; soil stabilization; traffic studies; economics of planning and design. Prerequisite: CE 113, CE 135. 3 s.h. (w) PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR THARP

CE 118. MATERIALS OF ENGINEERING.—Study and testing of materials, commonly used in engineering. Standard tests to determine significant physical properties of cementing materials and aggregates. The design and proportioning of concrete mixtures. Prerequisite: Engrg 107; concurrent: Engrg 109. 2 s.h. (w) ASSISTANT PROFESSORS ARGES AND GARDNER

CE 121. *HYDROLOGY.—Fundamentals of meteorology; precipitation; evaporation. Ground water development. Stream flow and stream gaging. Hydrograph analysis. Flood routing. Field trips to be arranged. Prerequisite: Engrg 128. 3 s.h. (w) PROFESSOR WILLIAMS AND ASSISTANT PROFESSOR PETERSON

CE 123. HYDRAULIC ENGINEERING.—Pipe flow, compound pipe systems, network analysis, analysis and problems on pumps and turbines, fundamental aspects of hydrology. Open channel flow, non-uniform flow computations. Irrigation and drainage problems. Flood control and hydraulic structures. Prerequisite: Engrg 128. 3 s.h. (w) ASSISTANT PROFESSOR PETERSON

* Offered only upon sufficient demand; enrollment limited.

CE 124. SANITARY ENGINEERING.—Public Health and Engineering Aspects of Water Supply and Waste Disposal. Population estimation, storage requirements, supply and collection systems. Water and waste treatment, laboratory analyses and interpretation of results. Prerequisite: CE 123, Chemistry 2. 3 s.h. (w)

ASSISTANT PROFESSOR PETERSON

CE 131. STRUCTURAL MECHANICS I.—Stresses in trusses by algebraic and graphic methods under all conditions of loading. Structural drafting. Prerequisite: Engrg 107. 3 s.h. (w)

ASSOCIATE PROFESSOR PALMER AND MR. TANER

CE 132. STEEL AND TIMBER.—Tension, compression, flexural members, eccentric connections, unsymmetrical bending, riveted and welded plate girders, trusses and office building frames. Timber design using ring connectors. Design and detail drawings. Prerequisite: CE 131. 4 s.h. (w)

ASSOCIATE PROFESSOR PALMER

CE 133. REINFORCED CONCRETE.—Theory and design of reinforced concrete beams, columns, and footings. Arches and bents by column analogy. Prerequisite: CE 140. 4 s.h. (w)

ASSISTANT PROFESSOR GARDNER

CE 135. SOIL MECHANICS.—Identification and classification; flow nets; frost action; stability of foundations, cuts and embankments, and retaining walls; settlement. Laboratory includes identification, permeability, shear, unconfined compression, consolidation and compaction tests. Prerequisite: Engrg 107. 3 s.h. (w)

ASSISTANT PROFESSOR GARDNER

CE 137, 138. SEMINAR.—Students are required to make reports and to talk on current engineering literature or on such other topics as may be assigned. 1-2 s.h. (w)

STAFF

CE 140. STRUCTURAL MECHANICS II.—Application of least work, slope deflection, and moment distribution to statically indeterminate structures. Deflection of trusses. Prerequisite: CE 131. 3 s.h. (w)

PROFESSOR ROWE AND ASSOCIATE PROFESSOR PALMER

CE 142.*ADVANCED HYDRAULICS.—Statistical and dynamical principles of fluids applied to specific engineering problems. Effects of gravity, viscosity, compressibility, and surface tension on fluid motion in closed conduits and open channels; surface and form resistance; dimensional analysis and theory of models. Non-uniform flow in open channels. Hydraulic jump, backwater curves. Prerequisites: Engrg 128 or ME 105. 3 s.h. (w)

PROFESSOR WILLIAMS

CE 143, 144. PROJECTS IN CIVIL ENGINEERING.—This course may be assigned by the Chairman of the Department to certain seniors who have shown an aptitude for research in one distinct field of civil engineering, in which case it may be substituted for certain general civil engineering courses. 2-6 s.h. (w)

STAFF

CE 146. PROFESSIONAL ENGINEERING PROBLEMS.—Professional aspects of civil engineering practice. Selected problems in analysis and design, consideration of engineering economy, contracts, specifications, and ethics. Seniors only. 2-3 s.h. (w)

ASSOCIATE PROFESSOR PALMER

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

ELECTRICAL ENGINEERING

ASSOCIATE PROFESSOR VAIL, CHAIRMAN; PROFESSOR SEELEY; ASSOCIATE PROFESSORS KRAYBILL AND MEIER; ASSISTANT PROFESSORS ARTLEY AND OWEN; MESSRS. BRIGHAM, LAHEY, MCKEEL, THURSTONE, TRICKEY AND YOUNG

EE 51. ELECTRICAL ENGINEERING ORIENTATION.—The basic philosophy of engineering education; an introduction to the staff, the curriculum, and the facilities of the Department of Electrical Engineering; techniques for use of the library; instruction in use of the sliderule and in methods of study; information concerning the role of engineering and of the professional engineering societies in

* Offered only upon sufficient demand; enrollment limited.

our national life; introduction to the principles of engineering economy. One two-hour session. 1 s.h. (w)

ASSOCIATE PROFESSOR KRAYBILL AND
ASSISTANT PROFESSOR ARTLEY

EE 52. ELECTRICAL ENGINEERING PRINCIPLES I: ELECTROMAGNETICS.—The first of a three-course sequence that develops the fundamental principles common to all electrical engineering. The mathematical and physical analysis of energy relations in electric and magnetic fields; the interrelationships between field and circuit concepts as a transition to the study of electric and magnetic circuits; vector notation; potential; gradient; Faraday's and Coulomb's laws; Ampere's law; dielectric and magnetic materials; resistance, capacitance and inductance of systems of conductors; systems of electric and magnetic units; simple circuits. Four recitations. Prerequisite: Mathematics 52; Physics 42. 4 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 71. INSTRUMENTATION.—Basic principles of instrumentation systems: characteristics and construction of devices for measuring physical quantities encountered in all branches of engineering. One three-hour session. Prerequisite: Mathematics 51; Physics 42. 1 s.h. (w)

ASSISTANT PROFESSOR ARTLEY
AND MR. LAHEY

EE 101. ELECTRICAL ENGINEERING PRINCIPLES II: CIRCUITS.—The principles of alternating- and direct-current electric circuits; instantaneous and effective values; the algebra of phasors and complex quantities; impedances in combination; Kirchhoff's laws; coupling; non-sinusoidal waves; Laplace transform; transients. Prerequisite: EE 52. Concurrent: Mathematics 111. 3 s.h. (w)

ASSOCIATE PROFESSOR VAIL

EE 102. ELECTRICAL ENGINEERING PRINCIPLES III: NETWORKS.—The principles of electric network analysis employing more sophisticated techniques than were encountered in the preceding course. Matrix notation; the generalized concept of impedance; the use of electric network analogue techniques in solving non-electrical problems; mesh and nodal analysis; wye-delta transformations; reciprocity theorem; Thevenin's and Norton's theorems; polyphase circuits. Prerequisite: EE 101; Mathematics 111. 3 s.h. (w)

ASSOCIATE PROFESSOR VAIL

EE 106. INTRODUCTORY ELECTRONICS.—Topics that are basic to engineering applications of electronics; particle ballistics; emission; conduction of vacuums, gases, liquids and solids; static and dynamic characteristics of vacuum and solid state devices; basic amplifier circuits. Three recitations. Prerequisite: EE 101. Concurrent: EE 114. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY AND MR. LAHEY

EE 107-108. ELECTRICAL ENGINEERING PRINCIPLES LABORATORY.—Instruction in electrical laboratory techniques and in the preparation of engineering reports; experimental verification and amplification of the theory in the sequence of courses EE 52, EE 101 and EE 102. One three-hour laboratory. 2 s.h. (w)

MESSRS. THURSTONE AND YOUNG

EE 114. INTRODUCTORY ELECTRONICS LABORATORY.—A course designed to acquaint the student with electronic equipment and laboratory techniques, as well as to complement and supplement the principles of the classroom course, with which it should be taken concurrently. 1 s.h. (w)

STAFF

EE 123. PRINCIPLES OF ELECTRIC CIRCUITS.—A course designed especially for students in other branches of engineering, covering the fundamental electrical units and both alternating- and direct-current circuits. Three class sessions and one three-hour laboratory. Prerequisite: Mathematics 52; Physics 42. 4 s.h. (w)

ASSOCIATE PROFESSOR KRAYBILL AND MESSRS.
BRIGHAM, LAHEY, McKEEL AND YOUNG

EE 124. PRINCIPLES OF ELECTRIC MACHINERY.—A course designed especially for students in other branches of engineering, covering the application of the principles of course EE 123 to alternating and direct-current machinery and associated apparatus. Three class sessions and one three-hour laboratory. Prerequisite: EE 123. 4 s.h. (w)

ASSOCIATE PROFESSOR KRAYBILL AND MESSRS.
BRIGHAM, LAHEY, McKEEL AND YOUNG

EE 159. *TRANSMISSION.—A development of the theory underlying the transmission of electric energy over conductors at both power and communication frequencies. Two class sessions and one two-hour computation. Prerequisite: EE 102, EE 106; Mathematics 111. Elective for electrical majors. 3 s.h. (w)

PROFESSOR SEELEY

EE 161. *HIGH-VOLTAGE PHENOMENA.—An introductory study of high-voltage phenomena and their engineering application; behavior of gaps and insulators upon application of power-frequency and impulse voltages; corona; properties of insulating materials; high-voltage measurements; elements of high-voltage design. Two class sessions and one three-hour laboratory. Prerequisite: EE 101-102, EE 105-106, and permission of instructor. Elective for electrical majors. 3 s.h. (w)

ASSOCIATE PROFESSOR VAIL

EE 163-164. ELECTRIC MACHINERY LABORATORY.—A two-semester course paralleling and integrated with the classroom course, EE 257-258, with which it should be taken concurrently. 2 s.h. (w)

ASSOCIATE PROFESSOR MEIER; MR. MCKEEL

EE 165-166. ELECTRICAL ENGINEERING SEMINAR.—A course in which seniors are required to present oral reports and dissertations on material appearing in current engineering literature. Juniors may participate, but without credit. 2 s.h. (w)

STAFF

EE 167-168. ADVANCED ELECTRONICS LABORATORY.—A two-semester laboratory course paralleling and integrated with the classroom course in Advanced Electronic Networks, with which this course should be taken concurrently. 2 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 171. *FUNDAMENTALS OF ILLUMINATION.—Factors that influence seeing; lighting language, sources, and measuring techniques; basic factors involved in recommended lighting practice. Two class sessions and one two-hour computation. Prerequisite: EE 101-102 or EE 123, and permission of instructor. Elective. 3 s.h. (w)

ASSOCIATE PROFESSOR KRAYBILL

EE 173-174. *PROJECTS IN ELECTRICAL ENGINEERING.—A course which may be undertaken only by seniors who show special aptitude, or who may have had previous experience directly related to the proposed project. The consent of the Chairman of the Department must be obtained before registering. Elective for electrical majors. 3-6 s.h. (w)

STAFF

EE 175. *NETWORK ANALYSIS.—An advanced study of electric network theory and its application to certain problems in engineering practice; complex frequency; pole and zero network analysis; analogue solutions; filters and transmission lines. Prerequisite: EE 102; permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 177. *ELECTROMAGNETIC THEORY.—Vector analysis; Maxwell's equations; radiation; propagation; antennas. Prerequisite: EE 102; permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 179. *ADVANCED ELECTRICAL MEASUREMENTS.—The theory and practice of measurements of electrical quantities at extremes of voltage, current, power, and frequency. Two class sessions and one three-hour laboratory. Prerequisite: EE 71, EE 102, EE 106; and permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 189. *ELECTROMAGNETIC DEVICES.—General concepts and techniques useful in solving problems arising in the design of electromagnetic devices, particularly those employing ferro-magnetic materials; relays; saturable reactors; rotating amplifiers; motors and generators. Prerequisite: permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 197. *INDUSTRIAL APPLICATION OF ELECTRICAL EQUIPMENT.—Lectures, demonstrations, and recitations designed especially for students in other branches of engineering, dealing with the basic principles of utilization of a wide

* Offered only upon sufficient demand; enrollment limited.

variety of electrical equipment in industrial practice. Emphasis on industrial control, motor and generator application, and electronic devices and applications. Prerequisite: EE 124; permission of instructor. Elective for nonelectricals. 3 s.h. (w)

ASSOCIATE PROFESSOR MEIER

EE 199. * **FEEDBACK CONTROL SYSTEMS.**—The theory, analysis, design and operation of servomechanisms, regulators, program controllers, and other feedback controls; electrical, mechanical, hydraulic, aerodynamic, pneumatic, and thermal systems; steady-state and transient solutions; stability criteria and diagrams; linear and nonlinear systems. Two class sessions and one three-hour laboratory. Prerequisite: EE 102, EE 106, and permission of instructor. Concurrent: EE 163 and EE 257. Elective for electrical majors. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 201. * **ENERGY SYSTEMS.**—Consideration of general concepts of energy storage, transfer, transformation, and control that are applicable to a wide variety of technical systems, with emphasis on their common mathematical structure. Included are electrical, magnetic, mechanical, hydraulic, aerodynamic, and thermal systems. Applications to specific engineering devices and machines. Prerequisite: permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR ARTLEY

EE 202. * **INFORMATION SYSTEMS.**—Consideration of general concepts of information storage, transfer, and processing. Optimum total response of information handling systems, including considerations of stability and dynamic response in the time and frequency domains. Applications to communications networks and devices, including an introduction to computers. Prerequisite: permission of instructor. 3 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 211. * **SOLID STATE ENGINEERING.**—An introduction to concepts and engineering applications of solid state physics: crystalline structure and thermal properties of solids; insulators, semiconductors, and conductors; magnetic materials. Prerequisite: permission of instructor. 3 s.h. (w)

ASSOCIATE PROFESSOR VAIL

EE 231. * **NUCLEAR ENGINEERING.**—Review of nuclear physics; fission and the chain reaction; nuclear reactor principles; materials, instrumentation, and control of nuclear reactors; selected applications and techniques of nuclear engineering. Prerequisite: permission of instructor. 3 s.h. (w)

ASSOCIATE PROFESSOR MEIER

EE 257-258. **ELECTRIC MACHINERY I-II.**—Application of the principles of the first three years to the underlying theory of design and operation of both static and rotating electric machinery; transformers; rotating machine components; energy flow in generators and motors; induction and synchronous generators and motors; commutation; d-c generators and motors; series and parallel operation of electric machines. Prerequisite: EE 102. Concurrent: EE 163-164. 6 s.h. (w)

ASSOCIATE PROFESSOR MEIER AND MR. TRICKEY

EE 259. * **ADVANCED ELECTRICAL ENERGY CONVERSION.**—Advanced theory of rotating electric machines; direct and quadrature axis components; equivalent circuits; symmetrical components; transients in machine systems. Prerequisite: an advanced course in electric machinery and permission of instructor. 3 s.h. (w)

ASSOCIATE PROFESSOR MEIER

EE 261-262. **ADVANCED ELECTRONIC NETWORKS I-II.**—Advanced topics in engineering electronics; electronic circuit analysis; narrow- and wide-band amplifiers; feedback amplifiers; oscillators; modulation and demodulation; non-sinusoidal waves in linear and non-linear circuits; microwave devices; communication systems. Prerequisite: EE 102; EE 106. Concurrent: EE 167-168. 6 s.h. (w)

ASSISTANT PROFESSOR OWEN

EE 263-264. * **OPERATIONAL CIRCUIT ANALYSIS.**—The mathematical analysis of certain circuits used in electrical engineering, with an introduction to the application of operational calculus to circuit analysis. Prerequisite: EE 101-102, Mathematics 111, and permission of instructor. Elective for electrical majors. 6 s.h. (w)

PROFESSOR SEELEY

* Offered only upon sufficient demand; enrollment limited.

EE 265.*ADVANCED TOPICS IN COMMUNICATIONS.—Special problems dealing in the design and application of devices and systems in communications engineering. Prerequisite: an advanced course in electronic networks. 3 s.h. (w)

ASSISTANT PROFESSOR OWEN

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

MECHANICAL ENGINEERING

PROFESSOR MACDUFF, CHAIRMAN; PROFESSORS KENYON AND REED; ASSISTANT PROFESSORS ELSEVIER, FULTON, LEWIS AND WILBUR; MESSRS. CALLESON, RABIN, SHAWVER, AND TAYLOR

ME 52. KINEMATICS, MECHANISM AND KINETICS.—Motion of particles. Mathematical and graphical studies of displacement, velocity and acceleration in mechanical elements and systems. Synthesis and analysis of mechanisms for automatic machines; work, energy, impulse and momentum applied to the plane motion of rigid bodies. Three recitations and three laboratory hours. Prerequisite: Physics 41, Engineering 2. Concurrent: Mathematics 52, Engineering 57. 4 s.h. (w)

PROFESSOR MACDUFF, MR. RABIN

ME 101-102. ENGINEERING THERMODYNAMICS.—A basic study of the laws of thermodynamics, their corollaries, and their use in engineering analysis and design. Properties and processes of gases, vapors, vapor-liquid systems, and mixtures. Cycles. Combustion. Prerequisite: Chemistry 2, Physics 42, Mathematics 52. 6 s.h. (w)

ASSISTANT PROFESSOR WILBUR

ME 103-104. APPLIED THERMODYNAMICS.—A terminal course in thermodynamics and its engineering applications, for civil and electrical engineering students. First semester: first and second laws, gases, vapors, processes, cycles. Second semester: combustion analysis, applications of the first and second laws of thermodynamics, heat transfer, psychrometry and refrigeration. Prerequisite: Chemistry 2, Physics 42, Mathematics 52. 6 s.h. (w)

PROFESSORS KENYON AND REED, MR. RABIN

ME 105. FLUID MECHANICS.—An introduction to fluid statics and dynamics. Basic laws, internal and external flow phenomena, dimensional analysis, dynamic similarity, viscosity, compressibility, propulsion and fluid power. Prerequisite: Physics 42, Mathematics 52. 3 s.h. (w)

PROFESSOR KENYON

ME 106. HEAT TRANSFER.—A basic course covering conduction, radiation and convection; heat transfer to boiling liquids and condensing vapors; over-all transfer of heat; steady state and variable flow; graphical and analytical solutions. Prerequisite: Mathematics 52, Physics 42. Concurrent: ME 102 or ME 103, ME 105 or Engineering 128. May be elected by a limited number of CE and EE students. 3 s.h. (w)

PROFESSORS REED AND KENYON

ME 107. MATERIALS AND PROCESSES.—Lectures and recitations covering elementary metallurgy, selection and mechanical properties of engineering materials, and effect of fabrication methods upon properties; casting, forging, welding, rolling, machining, grinding, other common processes and interchangeable manufacture as applied to present-day industry. Supplemented with films and demonstrations. Prerequisite: Chemistry 2, Engineering 107, Engineering 109. 3 s.h. (w)

PROFESSOR MACDUFF, MESSRS. CALLESON AND RABIN

ME 108. *AERONAUTICS.—A general course applying the principles of fluid mechanics to airfoils, propellers and the complete airplane. Prerequisite: ME 105. 3 s.h. (w)

ASSISTANT PROFESSOR ELSEVIER

ME 113-114. JUNIOR MECHANICAL ENGINEERING LABORATORY.—Open only to mechanical engineering students. First semester: experiments and reports on instruments, dynamometers, hydraulics, analysis of exhaust gas, and properties of fuels and oils. Second semester: experimental fuel analysis, calorimetry, flow phenomena and instrument calibration. Concurrent: ME 101-102. 2 s.h. (w)

STAFF

* Offered only upon sufficient demand; enrollment limited.

ME 115-116. MECHANICAL ENGINEERING LABORATORY.—Open only to electrical and civil engineering students. Experiments and reports on instruments, hydraulics, brakes and dynamometers, analysis of exhaust gas, heating value of fuels, internal combustion engines, air compressor, steam engine, steam turbine, centrifugal fan and centrifugal pump. Concurrent: ME 103-104. 2 s.h. (w) STAFF

ME 150-151. MACHINE DESIGN.—Application of the principles of mechanics, strength of materials, constructive processes and engineering drawing to the design of machines and the analysis of machine elements, followed by the design of at least one complete machine. ME 150 has one recitation and three laboratory hours; ME 151 has three recitations and six laboratory hours. Prerequisite: Engineering 107, Engineering 109, ME 52. Concurrent with ME 150: ME 107. 7 s.h. (w) ASSISTANT PROFESSOR LEWIS AND MR. CALLESON

ME 153-154. HEATING, AIR CONDITIONING AND REFRIGERATION.—A fundamental course with emphasis on the theoretical basis of the subject. Determination of heat losses and gains; design of steam and hot water heating systems; panel heating. Fundamentals of refrigeration theory and design. Laboratory experiments combining rating and testing with demonstrations of principles. Prerequisite: ME 102 or ME 104, ME 106. Concurrent: ME 159-160. Three recitations, three laboratory hours in alternate weeks. 7 s.h. (w) PROFESSOR REED

ME 155 INTERNAL COMBUSTION ENGINES.—Principal cycles; fuels and fuel mixtures; effect of real mixtures on theoretical cycles; combustion; carburetion and fuel injection. Thermodynamic analysis of engine performance. Modern development in the internal combustion engine. Prerequisite: ME 101-102. 3 s.h. (w) ASSISTANT PROFESSOR ELSEVIER

ME 157. *PUMPS, COMPRESSORS AND TURBINES.—An introduction to the theory and design of centrifugal pumps and compressors, axial-flow compressors, impulse and reaction turbines, and gas turbine plants. Includes combustion systems and regenerators. Prerequisite: ME 102, ME 105, ME 106. 3 s.h. (w) PROFESSOR KENYON

ME 158. INDUSTRIAL ENGINEERING.—A study of the growth and present tendencies of productive industries as concerns the engineer. Specific topics treated are: plant location, organization, production and cost controls, wage payment, etc. Seniors only. 3 s.h. (w) PROFESSOR KENYON AND ASSISTANT PROFESSOR LEWIS

ME 159-160. SENIOR MECHANICAL ENGINEERING LABORATORY.—Open only to mechanical engineering students. First semester, 1 s.h.: experiments and reports on performance and economy of internal combustion engines, centrifugal pump and fan, steam engine and turbine, flow in ducts, heat exchanger. Second semester, 1 s.h.; experiments and reports on air compressor and on steam power plant components; plan and execute original experiments. Prerequisite: ME 105, ME 106, ME 114. (w) STAFF

ME 162. POWER PLANTS.—A study of the economic and engineering factors affecting the location and selection of power plants and related equipment. Discussion of conventional and nuclear fuels, other energy sources, methods of power production and control and safety problems in nuclear plants. Prerequisite: ME 102 or ME 104. 3 s.h. (w) PROFESSOR KENYON

ME 163. ADVANCED MECHANICS.—An introduction to the dynamics of mechanical systems; equilibrium, stability, lumped and distributed systems, cradle and field balancing. Study of such systems by classical differential equations, mechanical impedance, operational calculus and analog simulation. Prerequisite: Mathematics 53, ME 151. 3 s.h. (w) PROFESSOR MACDUFF

ME 164. *ENGINEERING ANALYSIS.—A study of a series of engineering problems with particular reference to mathematical and graphical methods of solution and engineering interpretation of results. 3 s.h. (w) ASSISTANT PROFESSOR WILBUR

ME 166. *AIR CONDITIONING DESIGN.—Analysis of air-conditioning requirements, summer and winter, commercial and industrial. Design of systems and units; selection of equipment. Prerequisite: ME 153. 3 s.h. (w) PROFESSOR REED

* Offered only upon sufficient demand; enrollment limited.

ME 171. INSTRUMENTATION.—An introduction to the basic fundamentals of instrumentation and of the control of processes and systems, with emphasis on the principles and accuracy of measurements. Open to seniors only. One recitation, three laboratory hours. 2 s.h. (w) PROFESSOR MACDUFF

ME 173-174. MECHANICAL ENGINEERING SEMINAR.—A course designed to keep the students abreast of progress in the engineering field and to develop their ability to express ideas effectively in speech and writing. Each student gives at least one major presentation. Open to seniors only. First semester, 2 s.h.; second semester. 1 s.h. (w) STAFF

ME 197-198. PROJECTS IN MECHANICAL ENGINEERING.—This course may be assigned by the Chairman of the Department to certain seniors who express a desire for such work and who have shown aptitude for research in one distinct field of mechanical engineering. Either semester or both semesters. 1-6 s.h. (w) STAFF

The Department offers work leading to graduation with distinction. See the section on Honors and Prizes in this *Bulletin*.

ENGINEERING SUBJECTS COMMON TO ALL CURRICULA

ENGRG 1. ENGINEERING DRAWING.—The study of mechanical drawing with emphasis on third angle projection, pictorial drawing, dimensioning, working drawings, pencil and ink techniques. 2 s.h. (w)

ASSISTANT PROFESSORS HAINES AND LEWIS AND STAFF

ENGRG 2. DESCRIPTIVE GEOMETRY.—A study of drawing board geometry with emphasis on line and plane problems, developments, and intersections. Further emphasis on drawing techniques. Prerequisite: Engrg 1. 2 s.h. (w)

ASSISTANT PROFESSORS HAINES AND LEWIS AND STAFF

ENGRG 57. STATICS.—A study of force systems, equilibrium by algebraic and graphic methods, centroids, friction, moment of inertia. Prerequisite: Engrg 1. Concurrent: Mathematics 52. 3 s.h. (w)

ASSOCIATE PROFESSOR PALMER AND
ASSISTANT PROFESSOR THARP

ENGRG 58. DYNAMICS.—General principles of dynamics as applied to particles and rigid bodies. Translation, rotation, general plane motion, work and energy, impulse and momentum, gyroscopic motion. Prerequisite: Engrg 57 and Mathematics 52. 3 s.h. (w)

ASSISTANT PROFESSOR ARGES

ENGRG 107. STRENGTH OF MATERIALS.—Stresses and strains in elastic bodies; shear and moment diagrams; stresses in beams; beam deflections by double integration and area—moments; statically indeterminate beams, torsion, principal stresses. Prerequisite: Engrg 57, Mathematics 52. 3 s.h. (w)

PROFESSOR ROWE

ENGRG 109. STRENGTH OF MATERIALS LABORATORY.—Study and use of testing machines and strain gages. Tests to determine significant physical properties of the common engineering materials. Experimental verification of the elementary theory of structural members. Must be preceded or accompanied by Engrg 107. 1 s.h. (w)

ASSISTANT PROFESSOR ARGES AND MR. TANER

ENGRG 128. HYDRAULICS.—Physical properties of fluids, fluid statics, continuity and energy principles, pressure-momentum principle, elementary principles of turbines and pumps, flow of a real fluid, dimensional analysis and dynamic similarity, fluid flow in closed conduits and in open channels, fluid measurements. Prerequisite: Engrg 58 or ME 52. 3 s.h. (w)

PROFESSOR WILLIAMS AND MR. HARRAWOOD

ENGRG 151. *AIRCRAFT STRUCTURES.—Fundamental theory of stress analysis of airplane components including an introduction to design principles and methods. Space structures, inertia forces, load factors, properties of aircraft materials, buckling of thin sheets and curved panels, semimonocoque structures, plasticity, shear flow theory, semitension field beams. Seniors only. Prerequisite: Engrg 107. 1 s.h. (w)

ASSISTANT PROFESSOR ARGES AND TANER

* Offered only upon sufficient demand; enrollment limited.

ENGRG 169. *LEGAL ASPECTS OF ENGINEERING.—A course designed to introduce engineering students to those aspects of the law encountered in the practice of engineering. Subjects included are: contracts and specifications, real and personal property, torts, insurance, agency, equity, evidence, labor management, sales, expert testimony, engineering registration and ethics. Open to seniors only. 3 s.h. (w) MR. RABIN

ENGRG 170. *PATENT LAW FOR ENGINEERS.—A course designed to familiarize engineering students with the legal principles and procedures for protecting patentable inventions, such as drafting and analysis of specifications and claims, study of infringements, assignments, licenses, and record documentation. Open to seniors only. 3 s.h. (w) MR. RABIN

* Offered only upon sufficient demand; enrollment limited.

Student Life and Activities



CONDUCT AND DISCIPLINE: The University expects of its students loyal and hearty cooperation in developing and maintaining high standards of conduct as well as of scholarship. The University therefore reserves the right, and matriculation by the student is a concession of this right, to ask the withdrawal of any student whose conduct at any time is not satisfactory to the University, even though no specific charge be made against the student.

General oversight of the conduct of students and the administering of discipline are under the supervision of the Vice-President in the Division of Student Life. Immediate supervision is entrusted to the Dean of Men and the Dean of Women. However, through the expressed willingness of the students of the University to assume the responsibility of maintaining high standards of morals and honor, the student body has properly become to a great degree self-governing. Two councils, one of men and the other of women, each composed of duly elected representatives of the student body, exercise the authority granted the students for their respective colleges to investigate all cases of misconduct, as well as all other cases of violation of proper student standards and traditions, and to make recommendations of penalties based on their findings. They exert a guiding and stimulating influence for the promotion of high ideals of conduct and of student relationships.

ASSEMBLY AND CLASS MEETINGS: The sophomore, junior and senior classes of Trinity College and the College of Engineering meet four times each year and on call to discuss matters pertinent to the individual groups. The freshman classes of these colleges hold weekly meetings. Attendance in class meetings is compulsory.

In the Woman's College the Student Government Association meets on first Monday evenings; house meetings are held on second Monday evenings; the College Assembly is held on third Monday evenings; and class meetings, with the exception of the freshman class, are held on fourth Monday evenings. The freshmen meet as a class each week. In each instance, attendance is required.

AUTOMOBILE REGULATIONS: Freshmen are not permitted to own or operate motor vehicles at the University. Members of other classes in Trinity College and the College of Engineering are permitted to operate motor vehicles provided they are registered and operated in accordance with University regulations; under the same conditions seniors in the Woman's College may have cars.

SCHOLASTIC REGULATIONS FOR PARTICIPATION IN ATHLETIC AND OTHER ACTIVITIES: Students who received less than a passing grade on more than six hours of required work of the preceding term are ineligible to represent the University in any athletic contest, concert, or other public event.

Members of athletic teams or other student groups engaging in public representation of the University are expected to be carrying their current work satisfactorily. Students may be barred from participation in such representation if, in the opinion of the dean, they fail to meet this requirement.

RELIGIOUS LIFE: "Eruditio et Religio," the motto emblazoned on the seal of the University, proclaims belief in the essential union of knowledge and religion in the educational process. Provisions, both academic and extra-curricular, are made for the realization of this aim. Course offerings in the field of Religion are described elsewhere in this catalog. The description below concerns provisions other than class work.

The Gothic Chapel stands at the center of the campus, an inspiring symbol of the place of religion in the well-balanced life. The Chapel encourages the cultivation of the spiritual and moral life of students through participation in a program of varied activities.

In the Service of Worship on Sunday morning several hundred students participate by singing in the choir; at least one hundred other students aid in special ways, as ushers, collectors, and assistants at communion services. Hundreds come to worship and are inspired by the beauty and challenge of these services.

But the Chapel also encourages the students to translate their worship into effective Christian living. A rich program of activities is offered, so that every student can find something that will challenge his interests and meet his needs as an active member of his faith.

These activities are developed along three lines: interfaith, interdenominational, and denominational. Protestant, Jewish, and Roman Catholic students are organized in their respective groups; but periodically they join together in interfaith programs which are carefully planned to respect the traditions of the various faiths. Interdenominational activities for all Protestant students are emphasized because it is believed that a more complete Christian faith is developed through sharing knowledge and fellowship with Christians of other churches.

Vital to the religious life at Duke are the various denominational groups. The Chapel looks to these organizations, under the leadership of their respective chaplains or advisers, to provide a continuing denominational experience through worship, study, service activities, and recreation. The promotion of churchmanship as a part of the total educational experience at Duke is designed to equip students to

assume the role of leaders in their local church when they leave the University.

Additional features of the program are the organ recitals and special musical services which are given from time to time on Sunday afternoons in the Chapel. During the summer, carillon recitals are presented twice a week.

The total religious program is under the direction of the Duke University Religious Council, composed of an equal number of faculty-staff members and students. The Chaplain is the administrative officer in charge of the religious activities program. Professional guidance is given by the Chaplain to the University, the Dean of the Chapel, the Choir Director, and the Organist, the Associate Directors of Student Religious Life, and the denominational Chaplains.

PUBLIC LECTURES AND SOCIAL FUNCTIONS: The Faculty Council on Public Lectures supervises all public lectures, addresses, and other public events given under the auspices of the University or of any organization in any way connected with the University. All dates and programs must be approved by the Council, which prepares an official yearly calendar. Current announcements of public occasions appear in the Weekly Calendar of Duke University issued by the Office of the Director of the Student Union.

A social committee composed of students and staff members from the undergraduate colleges exercises general supervision over major social functions. The executive officers of the committee are the Dean of Undergraduate Men and the Dean of Undergraduate Women.

MEDICAL CARE: The Student Health Program is closely related to the Teaching Hospital of the Duke University Medical School. Complete medical facilities, therefore, are always available to students. With necessary exceptions noted below, this type of care is furnished at minimum expense to regularly enrolled students. The cost is included in the general fee paid each semester and in the fees charged each student in the summer quarter.*

The service is under the direction of the University Physician with the cooperation of the Staff. It includes hospitalization in Duke Hospital, as deemed necessary by the Hospital Staff but limited to thirty days; medical and surgical care under the supervision of a senior physician or surgeon; drugs, X-ray work, and ward nursing. Special nursing is not covered. Students pay for board while in the hospital. Refraction of eyes, treatment of teeth and of all chronic and pre-existing conditions, such as diseased tonsils, hernias, pilonidal cysts and other elective surgery, chronic skin conditions, endocrine disturbances, etc., and accidents or illnesses occurring during vacations or while off the campus, are not included in this service. The cost of

* Only those students who have paid the fee for the semester, quarter or summer session during which illness occurs are entitled to the services described herein.

any necessary braces and orthopaedic appliances, as well as of special nursing, must be borne by the students, and blood used for transfusions must be paid for or replaced. If students have insurance providing hospitalization, surgical, or medical benefits, the benefits shall be applied to the cost of their medical care.

Advisory consultation with a psychiatrist at no expense is available to students through referral either by the Student Health Physicians or by the deans, but office visits for psychotherapeutic interviews cannot be included in this service.

A woman physician is in residence and a nurse in constant attendance at the Woman's College Infirmary. Patients in this Infirmary can be transferred to the Duke Hospital at any hour of the day or night. Male students receive ambulant care at the student health office in the hospital building during dispensary hours. Men are admitted to the hospital directly whenever necessary. The emergency service and the specialist consulting services of the Hospital and Medical School are always available.

Students are given a careful physical examination upon arrival at the University. Any physical defects are recorded along with the record of the questionnaire from the family physician. Every student should be re-vaccinated against smallpox within two years before admission to the University. It is urgently advised that the standard Salk vaccine routine for poliomyelitis be completed by all students and that all male undergraduates be actively immunized to tetanus by injections of toxoid.

PHYSICAL EDUCATION: Students of Trinity College and the College of Engineering are required to engage in some type of physical activity for two years or four full semesters. This work consists of participation in natural, practical, physical activity for at least three one-hour periods each week. The purpose is to improve body control and strength through big muscle activities, to stimulate the development of mental and physical alertness, to establish habits of regular exercise, and to give training and experience in various kinds of recreational sports that will be indulged in after the student is graduated from the University.

Intramural sports are promoted and fostered in all phases of athletic activity. Meets, tournaments, and leagues are seasonally organized in the different sports. All students of the two colleges are eligible to enjoy the intramural privileges, provided they comply with the intramural rulings. Participation in these activities is entirely voluntary, but they are very popular because they provide an opportunity for every man to enter into competition and recreation in those sports which he enjoys most.

The work of the Physical Education Department of the Woman's College is designed to give the students of that college an appreciation

of the value of activity for general physical well-being, skill in one or more activities which can be enjoyed as recreation during and after college, a well-developed and well-coordinated body, and a knowledge of good posture and efficient handling of the body in everyday activities. To this end, students are allowed to choose from a large number of activities, including individual, dual and team sports, swimming, and several types of dancing. Each student during her two years of required physical education must elect one course in dance and those students who are unable to pass the swimming test must take one course in swimming before graduation. At the mid-point in the fall semester of the freshman year, the activity course ends and all freshmen take two periods a week of body mechanics and one of social hygiene for the remainder of the semester.

The Dance Group, the Swimming Club, and the other sports clubs run by the Woman's Athletic Association give opportunities for all students to take part in the types of intramural activities most interesting to them. The swimming pool, tennis courts, and other athletic equipment are available to all students for use at specified times.

In order to meet certain hygienic aspects of physical education and intramural athletics, the University has made available for all students, in addition to facilities for physical activity and recreation, the following equipment and services:

1. (a) MEN. A regulation uniform: shirt, trunks, supporter, socks, sweat clothes, and towel.
- (b) WOMEN. Gym suit, dance costume, bathing suit, warm-up suit.
2. Provision for locker and handling of uniform.
3. The laundering of uniform and towel as needed.

The privileges and services listed above are available to all students who pay full fees, as long as they comply with the rules and regulations established for the care and handling of the equipment.

THE INTERCOLLEGIATE ATHLETIC PROGRAM: The program, controlled entirely by the University, consists of the organization and training of representative freshman and varsity teams in football, baseball, basketball, track, cross country, golf, lacross, soccer, swimming, tennis, and wrestling.

The program is under the supervision of the Athletic Council, composed of seven members. Three of the seven are appointed from the faculty as follows: one member from the Officers of General Administration, one from the Officers of Educational Administration, division of the Colleges, and one from the Officers of Instruction of the undergraduate colleges. From this group the President of the University appoints the faculty chairman, who serves as chairman of the Athletic Council and of its executive committee.

Four of the seven members are selected from the alumni. One of the four, a University Trustee, an alumnus, and a member of the

Board's standing Committee on Physical Education and Athletics, is appointed not less frequently than every three years by the chairman of the Board of Trustees. The remaining three, who may not succeed themselves, are elected annually by the general Alumni Association for terms of three years. The Director of Alumni Affairs serves *ex officio* as secretary of the Council and of the executive committee.

The three faculty members of the Athletic Council constitute a committee which alone has the responsibility of enforcing the scholarship and athletic requirements of the University for participation in intercollegiate sports. The athletic eligibility rules are those of the Atlantic Coast Conference.

The executive committee of the Athletic Council is composed of the faculty chairman of the Council, one other faculty member of the Council and one alumni member of the Council. The executive committee of the Council recommends to the President of the University persons to serve as Director of Athletics and as coaches in the various sports. The election of such persons, however, rests solely with the Board of Trustees of the University or with its Executive Committee on recommendation of the President of the University. The executive committee of the Council recommends to the Athletic Council athletic schedules and the award of insignia of merit earned by members of the athletic teams. However, decisions with respect to the same rest solely with the Athletic Council subject to approval of the President.

Each of the four undergraduate classes selects annually, for terms of one year, a member of each respective class to serve in an advisory capacity to the Athletic Council upon call of the faculty chairman on the matter of awarding insignia of merit.

All funds arising from athletics are handled entirely by the Treasurer of the University. An audit of the receipts and disbursements of these funds is made annually by the official auditors of the University and a report thereof made annually to the Executive Committee of the Board of Trustees.

THE DUKE STUDENT UNION: All students of Trinity College, the College of Engineering, and the Woman's College are members of the Student Union. The Union Building, located on the West Campus, is the student center. In one section the alumni offices, dining facilities, University store, grill, soda fountain, post office, barber shop, bank, and ball room are housed. In the other there are student organization offices; meeting rooms; information center; music, television, reading, and Town Boys' lounge; and a recreational area. Similar facilities for services and activities for the Woman's College are provided on that campus.

The Union has as its stated purpose "to stimulate, promote, and develop the social, recreational, cultural, educational, and spiritual activities of the students of Duke University." This purpose is carried

out through a broad program of social and cultural recreation adapted to the leisure-time interests and needs of the campus. This program is administered by a Board of Governors composed of ten students and the Director of the Student Union. Numerous activity committees plan and work under the supervision of the Board of Governors.

STUDENT ACTIVITIES OFFICES: The Student Activities Offices, established for the purpose of guiding and coordinating the activities of the various student organizations, are under the supervision of the Director of the Student Union on the West Campus and the Dean of Undergraduate Women on the East Campus. The Offices cooperate with the University Treasurer's Office in providing banking service and advice with regard to budgeting, accounting, and auditing. Permanent records of all financial activities of organizations are kept here. These Offices, in cooperation with the University Purchasing Department, also serve in the capacity of purchasing agent for affiliated student organizations. There is no charge for this service.

The West Campus Student Activities Office publishes the weekly Calendar of Duke University and also acts as the coordinating center for the scheduling of events on both campuses.

STUDENT PUBLICATIONS: Student publications of the University are under the control of a Publications Board, which is constituted as follows: three members from the University staff and two from the alumni, appointed by the President; six men from the junior and senior classes, elected by the students in Trinity College and the College of Engineering; four women from the junior and senior classes, elected by the students in the Woman's College; and four editors and four managers of student publications, *ex officio* members without voting power. No student publications can be started at the University without the approval of the Board.

The four publications of campus-wide interest are the *Archive* (monthly); the *Chanticleer* (annual); the *Chronicle* (semiweekly); *Duke Peer*. The Engineering students issue a professional bimonthly magazine, the *DukEngineer*.

STUDENT BROADCASTING SYSTEM: The student broadcasting system of the University is under the control of a Radio Council, which is constituted as follows: two members from the University staff, appointed by the President; three members from the faculty who serve as engineering, production, and business advisers; three men from the junior and senior classes, including one engineer, elected by the students in Trinity College and the College of Engineering; one woman from either the junior or senior class, elected by the students of the Woman's College; one man from either the junior or senior class, elected by the members of the Student Legislature of the Men's Student Government Association from within the membership of that

body; one woman from either the junior or senior class, elected by the members of the Woman's Student Government Council from within the membership of that body; and four student managers of the student broadcasting system, *ex officio* members without voting power.

STUDENT ORGANIZATIONS: The following organizations are active on the campus: *The Men's Student Government Association of Duke University* comprises all men students in Trinity College and the College of Engineering. Through its officers and a council it initiates policies and oversees matters within the control of the male student body. The council is composed of seven members: four executive officers, attorney general, chairman of the Campus Welfare Committee, and chairman of the Educational Affairs Committee.

The Woman's Student Government Association is similar in character to the men's association. Its council is composed of the officers of the Association, house presidents, house judicial representatives, and president of the Town Girls' Club, class representatives, and chairman of the Freshman Advisory Council, *ex officio*.

The Young Men's Christian Association and the *Young Women's Christian Association* are branches of the national student Christian Associations. Each body aims not only to enrich the religious life of its members as individuals but also to promote religious group activity. These organizations carry on extensive activity in the fields of social service, faculty-student relations, forums, and other related projects. Membership in the Student Religious Council relates these organizations to the total religious activities program of the Duke University Church, Interdenominational.

Other organizations and activities include the following: Air Force Club; Arnold Air Society; Bench and Bar Society (Pre-Legal Undergraduates); Chemistry Club; Class of 1957; Class of 1958; Class of 1959; Class of 1960; Commodore Club (N.R.O.T.C. Social Organization); Debate Council; Duke-Charlotte Club; Duke Players; Duke University Religious Council; Duke University Handbook, and Directory; Engineer's Student Council; Hoof 'n' Horn; Independent Dormitory Council; Interfraternity Council; Intramural Athletic Department; Men's Freshman Advisory Council; Pep Board; Pre-Medical Society; Publications Board; Radio Council, Reading Club; Semper Fidelis Society; Shoe and Slipper Club; Sociology Club; Student Religious Council; Student Union Board of Governors; Town Boys' Club; Town Girls' Club; WDBS (campus radio station); Woman's College Student Forum; Women's Athletic Association; Women's Freshman Advisory Council; Women's Pan-Hellenic Council; Young Democrats Club; and the Campus Chest Fund.

The following honorary orders and fraternities have chapters on the campus: National—Alpha Kappa Psi (Economics); Alpha Phi Omega (National Service Fraternity); Delta Phi Alpha (German);

Eta Sigma Phi (Classics); Kappa Chi (Pre-Ministerial); Kappa Delta Pi (Educational); Mu Sigma (Psychology); Omicron Delta Kappa (Leadership—Men); Phi Beta Kappa (Scholarship); Phi Eta Sigma (Freshman Scholarship—Men); Pi Gamma Mu (Social Science); Pi Mu Epsilon (Mathematics); Pi Sigma Alpha (Political Science); Sigma Delta Pi (Spanish); Sigma Pi Sigma (Physics); Sigma Xi (Science); Tau Kappa Alpha (Forensic); Tau Psi Omega (French).

Local—Ivy (Scholarship—Freshman Women); Delta Phi Rho Alpha (Athletic—Women); Varsity "D" Club (Athletic—Men); Beta Omega Sigma (Leadership—Sophomore Men); Sandals (Leadership—Sophomore Women); Order of Hippocrates (Pre-Medical); Phi Kappa Delta (Leadership—Women); Red Friars (Leadership—Senior Men); White Duchy (Leadership—Senior Women).

Engineering (Professional)—American Institute of Electrical Engineers; the American Society of Civil Engineers; and the American Society of Mechanical Engineers. Engineering (Honorary)—Tau Beta Pi (Engineering national honor society); Eta Kappa Nu (Electrical engineering national honorary society); Pi Tau Sigma (Mechanical engineering national honorary society); Order of St. Patrick (Leadership).

Local musical organizations available to qualified members are: Chamber Orchestra; Concert Band; Duke Ambassadors; Madrigal Singers; Marching Band (Men); Men's Glee Club; Men's Triple Quartet; Symphony Orchestra; University Chapel Choir; Women's Glee Club.

The following national social fraternities have chapters on the campus: Alpha Tau Omega; Beta Theta Pi; Delta Sigma Phi; Delta Tau Delta; Kappa Alpha; Kappa Sigma; Lambda Chi Alpha; Phi Delta Theta; Phi Kappa Psi; Phi Kappa Sigma; Pi Kappa Alpha; Pi Kappa Phi; Sigma Alpha Epsilon; Sigma Chi; Sigma Nu; Sigma Phi Epsilon; Tau Epsilon Phi; Theta Chi; Zeta Beta Tau.

The following national social sororities have chapters on the campus: Alpha Chi Omega; Alpha Delta Pi; Alpha Phi; Alpha Epsilon Phi; Delta Delta Delta; Delta Gamma; Kappa Alpha Theta; Kappa Delta; Kappa Kappa Gamma; Phi Mu; Pi Beta Phi; Sigma Kappa; Zeta Tau Alpha.

Honors and Prizes



HONORS: To be eligible for Honors a student must earn, during the year, credit for at least the minimum academic load permitted by the college in which he is registered. All semester hours on which a student receives a grade are counted in the determination of Honors. Students in the freshman, sophomore, and junior classes who earn an average of at least three and one-half quality points per semester hour are given Honors.

The degree of Bachelor of Arts or of Bachelor of Science with distinction is conferred in accordance with the following rules:

To be eligible for general Honors at graduation a student must have completed in residence a minimum of ninety semester hours. Those students who earn an average of at least three and one-half quality points per semester hour are recommended for a degree *magna cum laude*. Those who earn an average of at least three and three-fourths quality points per semester hour are recommended for a degree *summa cum laude*.

Graduation with distinction in his major department is awarded to the student who, in the opinion of the department and of a special committee of the faculty, has demonstrated exceptional achievement in the area of his special interest.

MEDALS AND PRIZES: *The Wiley Gray Medal* was established by the late Robert T. Gray, Esq., of Raleigh, North Carolina, to be awarded annually in memory of his brother. It is given for the graduating oration that shall be, in the opinion of a committee, the best, with respect to both declaration and composition.

The Debate Council authorizes the awarding of medals to members of the graduating class who have represented the University in at least two intercollegiate debates. The medals are given by the local chapter of the Tau Kappa Alpha Fraternity.

The Robert E. Lee Prize is the gift of The Reverend A. W. Plyler, of the Class of 1892, and Mrs. Plyler. The sum of \$50 is awarded annually at Commencement, preferably to that member of the senior class of Trinity College or the College of Engineering who, in character and conduct, in scholarship and athletic achievement, in manly virtues and capacity for leadership, has most nearly realized the standards of the ideal student. The Vice President in the Division of Student Life, the Graduate Manager of Athletics, and the President of the Student Council constitute a committee to draft and adopt regulations governing the award.

Alpha Kappa Psi Medallion. Beta Eta Chapter of Alpha Kappa Psi, a professional fraternity in commerce, awards annually the Alpha Kappa Psi Scholarship Key to the male senior student pursuing a degree in the Department of Economics and Business Administration who has attained the highest scholastic average for three years of collegiate work in this University.

Medal of the North Carolina Association of Certified Public Accountants. The North Carolina Association of Certified Public Accountants annually awards a medal to the senior who, in the judgment of his instructors, is the most outstanding student in accounting in his graduating class.

Julia Dale Prize in Mathematics. This is a prize of books given annually to the undergraduate who shows the greatest proficiency in the study of calculus.

The Milmow Prize, consisting of one year's subscription to the *Electrical World*, is awarded each year to that student from North or South Carolina graduating in the Department of Electrical Engineering who, in the opinion of the faculty of that department and as shown by his grades, has made the most progress in electrical engineering during his last year in college.

The Tau Beta Pi Prize. The North Carolina Gamma chapter of Tau Beta Pi, national honorary engineering fraternity, awards each year a suitable prize, such as an engineering handbook, to a sophomore student in engineering for outstanding scholastic achievement during the freshman year.

The Phi Lambda Upsilon Prize. Phi Lambda Upsilon, honorary chemical society, yearly awards a suitable prize to an outstanding junior who is majoring in chemistry. The recipient's name is inscribed on a plaque displayed in the Chemistry Library.

The Pegram Chemistry Club Prize is awarded in the spring of each year for scholarship in chemistry, physics, and mathematics. The prize consists of a one-year junior membership in the American Chemical Society and a one-year subscription to either the *Journal of the American Chemical Society* or *Industrial and Engineering Chemistry*. To qualify for this prize, the student must (1) be enrolled as an undergraduate of Duke University and (2) be taking or have taken a fourth-year chemistry course. The winner of this prize is selected by a committee consisting of at least one faculty member and at least two members of the Pegram Chemistry Club; the selection is based on the quality-point average for all courses taken in chemistry, physics, and mathematics. In case of a tie equal awards are given.

The Erasmus Club Prize in the Humanities. The Erasmus Club, founded in 1925, a group of Duke faculty members interested in research in language, literature, and the arts, seeks to stimulate interest and study in these fields. To encourage Duke students in this

field, the Erasmus Club has established an annual prize amounting to \$25.00, for the best original essay by an undergraduate which embodies the results of research, criticism, or evaluation in some subject in the humanities. Prospective competitors should consult some member of the faculty, preferably their major professor. Essays must be type-written and must be submitted to the president of the club before the first of April. The club reserves the right to withhold the prize in case there are no essays of acceptable quality.

The Anne Flexner Memorial Award in Creative Writing has been established by the friends of the family of Anne Flexner, who graduated from Duke in 1945. It consists of fifty dollars in cash and a book bearing the Anne Flexner Memorial Award bookplate. The award is given annually for the best piece of creative writing submitted by a Duke undergraduate. The competition is limited to short stories (5,000-word limit), one-act plays (5,000-word limit), poems (100-line limit), and informal essays (3,000-word limit). Only one manuscript may be submitted by a candidate, and manuscripts must be delivered to the English Office, Room 325 Allen Building, before April 15.

The William Senhauser Prize is given by the mother of William Senhauser in memory of her son, a member of the Class of 1942, who lost his life in the Pacific Theatre of War on August 4, 1944. The award is made annually to the sophomore or junior in Trinity College or the College of Engineering who has made the greatest contribution through participation and leadership in intramural sports. The winner of this prize is chosen by a committee selected by the President of the University.

The *Friends of Duke University Library* offer three prizes of \$25.00, \$15.00, and \$10.00, in an annual contest open to all undergraduate students for the best book collections acquired during their college years. The contest is supervised by the Undergraduate Committee of the Friends of the Library, which announces each fall the terms of the award. Inquiries may be directed to the Curator of Rare Books. Collections entered in the contest are exhibited each spring in the General Library, and the prizes are awarded on the basis of the student's collection and a personal interview to determine the overall planning and objectives of his collecting activity, and his familiarity with his own books and the general field of his collecting interest.

THE GRADUATE SCHOOL OF ARTS AND SCIENCES

Fall Semester begins September 19, 1957

Spring Semester begins January 30, 1958

Admission



TO GRADUATE SCHOOL. Admission may be granted to a student who has received an A.B. or B.S. degree from an accredited institution after a four-year course of study. The undergraduate record should be well-rounded and of such quality as to give positive evidence of capacity for success in graduate study.

To apply for admission, the student must submit the following documents: (a) An official application form completely filled out; (b) An official transcript of all his college and graduate work, to be forwarded directly from the Registrar of his college to the Dean of the Graduate School at Duke University. Transcripts sent directly by the applicant are not acceptable. (c) Two or three letters of recommendation, to be furnished by persons best qualified to judge the applicant as a prospective graduate student. (d) The submission of scores on the Graduate Record Examination is required under the following conditions: (1) for all applicants except foreign students for graduate work in the departments of Biochemistry, Economics, and Psychology; (2) when an applicant has taken the examination prior to his application to graduate study; (3) when requested by the Admissions Officer to assist him in arriving at a decision as to the admission of the applicant. If the other documents of the applicant are satisfactory, he may be granted "provisional" admission until the Graduate Record Examination scores are submitted and accepted. Arrangements to take this examination can usually be made through officials of the student's college, or by correspondence with the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

APPLICATION PROCEDURE. A student desiring admission to the Graduate School, should request official application blanks from the Dean. These should be filled out fully and returned at the earliest moment. The other documents needed to complete the application, namely, transcripts, letters of recommendation, and, if required, the Graduate Record Examination scores, must be forwarded directly from the institutions or individuals to the Dean of the Graduate School. In no case will such documents be accepted from the student.

The application and all supporting documents should be submitted to the Dean of the Graduate School not later than August 1 by those applying for the fall semester, or January 1 by those applying for the spring semester. It is difficult to process properly applications received after these dates. It is the student's responsibility to make certain that his application is complete and in order before the dates specified.

When the application is approved, the student will receive a letter of admission, giving the date by which he must notify the Dean of the Graduate School of his intention to enroll for the term for which he is granted admission. In the event the application is not approved, the student will be informed of this fact.

Admission, once granted, is valid only for the term or year specified. Should a student be unable to enter the Graduate School at that time but wishes to be admitted to a subsequent term within a two year period, he must notify the Dean of the Graduate School of this fact and bring his application up to date. If he re-applies after two years from the date when first admitted, the student must follow the procedure used for an original application.

Foreign Students

It is the policy of the Graduate School to admit qualified foreign students to course work and in many instances to candidacy for a degree. In making application the student should follow the same procedures as are required of all other graduate students.

The foreign student whose native language is not English must submit, with his application, a statement by a qualified official that the applicant can read, write, speak, and understand English well enough to pursue a program of graduate study. If the applicant is deficient in this respect he must remove his deficiency before he can be accepted in the Graduate School. He must also present a statement certified by a responsible person that his finances are sufficient to maintain him during his stay at Duke University and a statement by a qualified doctor describing any emotional or physical illness the applicant has had during the five years preceding the time of his application. Unless specific arrangements have been made for a scholarship, the student must pay the regular fees.

Registration

After the applicant has received notification of his admission to the Graduate School and has returned his statement of acceptance of admission, he may present himself for registration. During the registration periods, announced in the *Bulletin*, he first confers with the Director of Graduate Studies of his major department, who prepares an Approval-and-Course Card, listing the course work to be taken during the semester. The student then presents this Approval-and-Course Card to the Graduate School, which enrolls him officially in his courses.

WHO MUST REGISTER. (1) All students who enter course work or residence for credit; (2) all students who have completed minimum requirements for an advanced degree, but continue to use the facilities of the University in their research; (3) all students who wish merely to audit a course or courses.

LATE REGISTRATION. All students are expected to register at the time stated in the *Bulletin*. *Those registering after the close of the announced registration period will be charged a late registration fee of five dollars.*

Degrees Offered



THE Graduate School of Arts and Sciences now offers the following degrees: The Master of Arts (A.M.), The Master of Science (M.S.), The Master of Education (M.Ed.), The Master of Arts in Teaching (M.A.T.), The Doctor of Philosophy (Ph.D.), and The Doctor of Education (Ed.D.).

Regulations Concerning Master's Degrees

RESIDENCE REQUIREMENTS. Candidates for all Master's degrees must spend, as a *minimum*, one full academic year in residence at Duke University. Often more time will prove necessary, depending upon the nature of the student's research problem and upon the student himself. Students who wish to complete their degrees wholly by summer work must be in residence for 30 weeks, and present 30 semester hours of registered credit.

CANDIDACY FOR THE MASTER'S DEGREE. To be considered as a candidate for a Master's degree (A.M., M.S., M.Ed., M.A.T.), the graduate student must (1) have made passing grades in all courses taken during the first period of residence. (If he registers for fewer than 12 semester hours of graduate courses during his first period of residence, he must make passing grades on the initial 12 hours of graduate courses), (2) have made a grade of "G" or "E" on at least 3 semester hours of this work, and (3) have received the approval of the major department (or in the case of the M.A.T., of the supervisory committee).

TRANSFER OF GRADUATE CREDITS. Credit for graduate course work earned at another institution will be determined only after a student has spent one semester at Duke University. After completing his first semester, the student should file a request that his credits be reviewed and a decision made.

Under certain circumstances a maximum credit of 6 semester hours may be allowed for graduate courses completed elsewhere. The acceptance of credit up to this amount, however, will not reduce the minimum period of full-time registered residence at Duke University.

With the approval of both the student's major department and the Dean of the Graduate School, a student who is granted such transfer credit may be permitted to register for as much as 12 semester hours of thesis research instead of the usual 6 semester hours. Or he may

be permitted to fill out his schedule with as much as 6 semester hours of further undergraduate training or 6 semester hours of required language courses on the undergraduate level. In no case will credit be allowed for extension or correspondence courses.

TIME LIMITS FOR COMPLETION OF MASTER'S DEGREES.

The candidate for a Master's degree must complete all of the requirements within a period of six calendar years from the date of his initial registration. Credits earned over a longer period of time cannot be credited toward a degree.

THE THESIS. The thesis should demonstrate the student's ability to collect, arrange, interpret, and report pertinent material on his special research problem. Although a publishable document is not required, the thesis must be written in an acceptable style and should exhibit the student's competence in scholarly methods and procedures.

The Master of Arts Degree

PREREQUISITES. As prerequisites to graduate study in his major subject, the student must have completed a *minimum* of 12 semester hours of approved college courses in that subject, and 12 additional semester hours in that subject or in related work. Since some departments require more than 12 semester hours, the student should read carefully the special requirements listed by his major department, which are included as headnotes to the course offerings in the *Bulletin*.

LANGUAGE REQUIREMENTS. The candidate for the A.M. degree must have a reading knowledge of at least one foreign language. (The several departments reserve the right to specify which foreign languages are acceptable.) The language requirement may be satisfied in either of two ways: (1) by passing an examination, officially conducted by the appropriate foreign language department at Duke University, or (2) by a transcript showing the completion of the third college year of one language, or the second college year of each of two acceptable foreign languages. Special language courses are offered during the regular semester for students who do not have sufficient undergraduate training in languages to satisfy alternative (2) and who are not prepared at the time of entry into graduate work to pass the language examination when it is first offered. Inquiries concerning this course should be made at the time of registration. The language requirements must be satisfied before the Master's examination is taken.

MAJOR AND MINOR SUBJECT. In his graduate work, the student must present acceptable marks for a minimum of 24 semester hours of graduate courses. Of these, at least 12 semester hours must

be in the major subject. The student must take a minimum of 6 semester hours in a minor subject which is approved by his major department. The remaining 6 semester hours of the necessary 24 may be taken in either the major or minor department, or in another approved by the major department and by the Dean of the Graduate School. In addition to these he must present a thesis, which carries a credit of 6 semester hours. Thus, his earned credit for the degree totals a minimum of 30 semester hours.

REGULATIONS AND PROCEDURES. On or before November 15 of the academic year in which the degree is expected to be conferred, the student must file with the Dean of the Graduate School, on the official form, the title of the thesis. This title must have the approval of the Director of Graduate Studies in the major department, and of the professor under whose direction the thesis will be written.

The student who completes all of his work for the degree and who expects to receive it at the regular commencement exercises in June, must so notify the Graduate School office before the March 8 preceding.

Four bound, typewritten copies of the thesis must be submitted in approved form to the Dean of the Graduate School on or before May 1 preceding the June Commencement at which the degree will be conferred. They must be submitted at least three, and preferably five, days before the date of the final examination so that they may then be submitted to the several members of the examining committee. Specific instructions concerning the preparation of the thesis may be obtained from the Graduate Office or the Director of Graduate Studies.

THE EXAMINING COMMITTEE AND THE EXAMINATION. After consultation with the professor who has directed the thesis, the Dean of the Graduate School appoints an examining committee composed of the director of the thesis and two other members of the Graduate Faculty, one of whom must be from a department other than that of the major.

The candidate appears before this committee for an examination which lasts for about one and one-half hours. The subject matter covered in the examination is usually restricted to the thesis and to the major field.

If the candidate passes his examination, the examining committee certifies this fact by signing the title page of the thesis. The candidate then returns the original and one carbon copy of the thesis to the Dean of the Graduate School, who deposits them in the University Library.

The Master of Science Degree

PREREQUISITES. The degree of Master of Science is offered in the fields of Civil, Electrical, and Mechanical Engineering. As prerequisites to this degree the student must have earned a Bachelor's degree from an accredited engineering college and have completed a minimum of 12 semester hours work in the major field.

FOREIGN LANGUAGE. There is no foreign language requirement for this degree.

MAJOR AND MINOR SUBJECTS. The work for the Master of Science degree is designed to provide a broad basic foundation in the science of civil, electrical, and mechanical engineering. The student must present acceptable marks for a minimum of 24 semester hours of graduate courses. Of these, at least 12 semester hours must be in the major subject. He must also take a minimum of 12 semester hours of minor work in the Departments of Mathematics, and Physics or Chemistry. In addition to these he must present a thesis, which carries a credit of 6 semester hours. Thus his earned credit for the degree totals a minimum of 30 semester hours.

REGULATIONS AND PROCEDURES. The regulations and procedures and the provisions for examination and an examining committee are the same as those for the Master of Arts degree.

The Master of Education Degree

PREREQUISITE. Before a student is admitted to graduate study for this degree, he should have completed, on the undergraduate level, a minimum of 18 semester hours of approved work in Education.

Before the degree is conferred the student must have had one year of actual teaching experience, or have met certification requirements by supervised student teaching in an accredited school. Such supervised student teaching may be at either the undergraduate or the graduate level.

REQUIREMENTS FOR THE DEGREE. The Master of Education degree may be earned either with or without the presentation of a thesis.

Without thesis: The required work includes a departmental major (Elementary Education, School Administration and Supervision, or Secondary Education) of at least 12 semester hours, and a minor of at least 6 semester hours outside the Department of Education. The remaining 12 semester hours are elective within the area of Education and the minor field, but require the approval of the student's major adviser and the Director of Graduate Studies.

Toward the end of his residence the student must pass a comprehensive examination on his departmental major. This examination shall be prepared and conducted by the instructors of the student's major as designated by the Director of Graduate Studies of the Department of Education. Request to take this examination should be made to the Director of Graduate Studies at least two weeks before the date at which the examination is to be conducted.

With thesis: Students who elect this plan are permitted to substitute a thesis for 6 semester hours of the required course work. The thesis subject must be approved by the professor who is to direct it, and by the Director of Graduate Studies. The title of the thesis must be filed with the Dean of the Graduate School on or before November 15 of the academic year in which the degree is expected to be conferred.

In addition to the thesis, the student must present at least 24 semester hours of course credit. Of these, 12 semester hours must be taken in the student's departmental major. Six semester hours, constituting a minor, must be taken outside of the Department of Education. The remaining 6 semester hours are elective within the area of Education and the minor field, but require the approval of the student's major adviser and the Director of Graduate Studies.

The regulations concerning the writing and submission of the thesis, and the examination of it, are the same as those governing the thesis for the Master of Arts degree.

The Master of Arts in Teaching Degree

PREREQUISITES. The degree of Master of Arts in Teaching is designed for teachers already in service and for recent graduates of Liberal Arts colleges who wish to enter public school teaching.

A student should normally have completed a minimum of 12 semester hours in his proposed major subject and an additional 12 semester hours in that or related subjects. In the event that a student wishes to undertake a graduate major different from the undergraduate major, the prerequisites may be modified upon the recommendation of the student's committee and the approval of the Dean of the Graduate School.

PROGRAMS FOR THE DEGREE. One of two programs may be arranged, in consultation with the student's committee:

A. A major in Education of 18 to 24 semester hours and 6 to 12 hours in non-education courses.

B. A major in non-education courses of 18 to 24 semester hours and 6 to 12 semester hours in Education.

In both programs a minimum of 30 semester hours is required.

The non-education courses are to be taken in one or more subjects ordinarily taught in the secondary schools. The amount and distribution of this work will be determined by the needs of the individual student.

The Master of Arts in Teaching may be earned with or without the presentation of a thesis. If a student, in consultation with his committee, elects to present a thesis, 6 semester hours of the total of 30 semester hours required will be allotted to thesis research. He will then be required to complete 24 semester hours of course credits. The regulations concerning the writing and submission of the thesis, and the examination of it, are the same as those governing the thesis for the Master of Arts degree. Candidates for the Master of Arts in Teaching who have not had teaching experience are required to take Education 215-216 (see description of this course on page 226) in which case a minimum of 36 semester hours is required.

THE COMMITTEE. Each candidate for the degree will be assigned a committee, appointed by the Dean of the Graduate School, to plan his program of study. This committee will consist of three members, at least one of whom will be from the Department of Education, and at least one from another department. The chairman of the committee will normally be chosen from the department of the major.

The Doctor of Philosophy Degree

The Ph.D. degree is essentially a research degree. Although course work is a necessary part of the student's program, the mere accumulation of course credits will not be sufficient for attaining this degree. The granting of the Ph.D. is based primarily upon the student's knowledge of a specialized field of study and upon the production of an acceptable dissertation embodying the results of original research.

Before undertaking a program of advanced work toward the Ph.D., the student should consult with the Dean of the Graduate School or the Director of Graduate Studies in his major department to determine the possibility of securing necessary instruction and supervision of research in his field of specialization.

REQUIREMENTS FOR THE PH.D. DEGREE. The formal requirements, discussed in detail below, for the Ph.D. degree are as follows: (1) foreign languages; (2) major and minor courses; (3) supervisory committee for program of study; (4) residence; (5) preliminary examination; (6) dissertation; (7) final examination. In order to be considered for candidacy for the Ph.D. degree, the student must have passed all of his course work in the first year of graduate study; on at least 9 semester hours he must have made a grade of "G" or better.

FOREIGN LANGUAGES. Normally, a reading knowledge of both French and German is required. Such knowledge is evidenced by the passing of an examination conducted by the appropriate language department at Duke University, in cooperation with the student's major department.

The Reading, Vocabulary, and Grammar Tests in French and German, given on the first day of registration each year, are open to all entering graduate students and to graduate students who have not previously attempted any language examination offered at Duke University. The tests are not required, but those students whose undergraduate preparation has included courses in foreign languages are encouraged to take one, or both, of the tests. If a student demonstrates adequate skill in a given language, he will be certified as having satisfied the language requirement without further examination. The student who does not demonstrate such skill will be given advice, based on an analysis of his test performance, as to the nature and amount of preparation desirable before he takes the regular language examination administered by the language departments.

During the fall semester a special course, designed to assist graduate students in acquiring a reading knowledge of French, is given for three hours a week. A similar course in German is given during the spring semester. These courses carry no graduate credit. In order to register for either of the courses, a student must reduce his normal load of graduate courses by three semester hours, with no reduction in fees. Students deficient in languages are urged to take these courses which have been planned solely to meet their needs. No auditors are allowed in the special language courses.

With the permission of the major department, and with the approval of the Dean of the Graduate School, a student may be allowed to substitute for either of these another language which has a definite relation to the candidate's program of work for the Ph.D. degree. By rule of the Graduate School Faculty, language examinations must be passed before a student takes his preliminary examination. Some departments require the student to master these languages early in the graduate program.

MAJOR AND MINOR. The student's program of study necessarily demands substantial concentration on courses in his major department. Enough work must be taken in another department to constitute an acceptable minor. Exceptions which permit both the major and minor within the same department are allowed only by the special permission of the Dean of the Graduate School.

COMMITTEE TO SUPERVISE THE PROGRAM OF STUDY. Ordinarily, during the student's third semester of graduate work a

supervisory committee of five members is appointed by the Dean of the Graduate School. This committee, with the professor who is to direct the student's research serving as chairman, formulates the program of study, which is submitted to the Dean of the Graduate School for his approval. Of the five members, one must be from a department (usually the minor) other than the major department. This committee, with occasional necessary changes, serves also as the examining committee for both the preliminary and the final Ph.D. examinations.

RESIDENCE. The normal period of residence is not less than three full academic years beyond the A.B. or B.S. degree. A student who already has his A.M. degree may be allowed one year of residence for it, and thus will need to spend a minimum of two additional years in residence. In unusual cases, a student who has spent the first two years in residence at Duke University may be allowed to take his third year of residence at some other accredited institution. This can be done only with the approval of the major department and of the Dean of the Graduate School. It should be understood that either the first two years or the last year must be spent in actual residence at Duke. Occasionally, because of undergraduate deficiencies, a student may need to spend additional time beyond the minimum residence in preliminary courses (for which he will not receive residence credit) as a background for certain aspects of his graduate program.

Except in unusual cases, graduate work of fragmentary character taken over a long period of years, or work completed many years before the student becomes a candidate for the degree at Duke University, will not be accepted as satisfying the requirements of residence.

CREDIT FOR SUMMER WORK. With the approval of the major department and of the Dean of the Graduate School, credit for a maximum of one year's residence may be granted for work completed in Summer Sessions. A full schedule of summer courses, carried for six weeks, constitutes one-fifth of a year's residence credit.

PRELIMINARY EXAMINATION. Near the end of the second academic year of graduate work (or in special cases early in the third year) the student must take his preliminary examination, which ordinarily covers the field of both his major and minor. Conducted by his Supervisory Committee, the examination is oral, or written, or both, as determined by the Committee. *Upon passing this examination, and not until then, the student is accepted as a candidate for the Ph.D. degree.* Transfer students who may already have passed a preliminary examination at another university must nevertheless take the examination at Duke.

PRIVILEGE OF RE-EXAMINATION. Should the student fail

the preliminary examination, he may apply, with the consent of his Supervisory Committee and of the Dean of the Graduate School, for the privilege of a second examination to be taken no sooner than six months after the date of the first. Failure on the second examination will render the student ineligible to continue his program for the Ph.D. degree at Duke University.

THE DISSERTATION. The dissertation is expected to be a mature and competent piece of writing, embodying the results of significant and original research.

The subject for the dissertation must receive the written approval of both the Director of Graduate Studies of the student's major department and of the professor who directs the dissertation. The title of the dissertation must be filed with the Dean of the Graduate School on or before October 15 preceding the June commencement at which the degree is expected to be conferred.

The dissertation must be completed to the satisfaction of the professor who directs it; and four bound, typewritten copies in approved form must be deposited with the Dean of the Graduate School on or before April 15 preceding the June commencement when the degree is to be conferred. Instructions concerning the preparation of the thesis may be obtained from the Graduate Office or the Director of Graduate Studies.

After the final examination the original and the first carbon copy of the approved dissertation are returned to the Dean of the Graduate School for deposit in the University Library.

DISSERTATION FEE AND PUBLICATION REQUIREMENT. Not later than May 1 preceding the June commencement when the degree is to be conferred, the candidate must deposit with the Treasurer of the University, a dissertation fee of \$50.00. Should a publication based on the dissertation appear in a form satisfactory to the professor under whom the dissertation was written and to the Dean of the Graduate School, within a period of three years from the date of the degree, the deposit fee will be returned to the student. If no publication based upon the dissertation is presented to the Graduate Office within the three-year period under the conditions stated above, the deposit fee is forfeited and is credited to a Special Dissertation Fund, which is used for subsidizing the publication of such dissertations as are recommended by the Graduate School Faculty.

FINAL EXAMINATION. The final oral examination shall be primarily on the dissertation. Questions may, however, be asked in the candidate's major field. Normally, one year must elapse between the dates of the preliminary and the final examinations.

If a student fails his final examination, he may be allowed to take it for a second time, but not sooner than six months from the date of

his first. Permission to take the second examination must be obtained from the professor who directed the dissertation and from the Dean of the Graduate School. Failure to pass the second examination renders the student ineligible to continue work for the Ph.D. degree at Duke University.

The Doctor of Education Degree

The Doctor of Education is a professional degree planned for those who are, or intend to become, school administrators, supervisors, directors of instruction, curriculum consultants, or college teachers of education.

ADMISSION. The candidate for the Ed.D. degree must meet the same requirements for admission to the Graduate School as the candidate for the Ph.D. degree. In addition to these uniform requirements, the candidate for the Ed.D. (1) must have had at least two years' experience in educational work; (2) must present strong letters of appraisal and recommendation from persons well qualified to speak with authority of his abilities; and (3) must present himself, if possible, for a personal interview. The Standing Committee on the Ed.D. degree reserves the right to insist upon an interview.

RESIDENCE. A minimum period of residence equivalent to three academic years beyond the A.B. or B.S. degree is required for the Ed.D. degree. Either the first two years or the last year must be taken at Duke, and the candidate must spend at least two consecutive semesters at Duke. Occasionally, because of undergraduate deficiencies, a student may need to spend additional time beyond the minimum residence in preliminary courses (for which he will not receive residence credit) as a background for certain aspects of his graduate program.

Except in unusual cases, graduate work of fragmentary character taken over a long period of years, or work completed many years before the student becomes a candidate for the degree at Duke University, will not be accepted as satisfying the requirements of residence.

ACCEPTABLE MARKS ON FIRST YEAR'S WORK. In order to be considered for candidacy for the Ed.D. degree, the student must have passed all of his course work in the first year of graduate study; on at least 9 semester hours he must have made a grade of "G" or better.

PRELIMINARY EXAMINATION. By the end of his second year of residence the candidate for the Ed.D. degree will take a preliminary examination similar in scope to that described for the Ph.D. degree. Only after he passes this examination, will he be considered a candidate for the degree.

PROGRAM OF WORK. The candidate for the Ed.D. degree will choose as his major field either Educational Administration and Supervision or Curriculum and Instruction.

Candidates in Administration and Supervision will take approximately twenty-four semester hours in that field, including the seminar in School Administration. In addition, they will take approximately twenty-four semester hours in other professional courses and a minor of at least twenty-four semester hours chosen from economics, law, political science, psychology and sociology.

Candidates in Curriculum and Instruction will take approximately twenty-four semester hours in Curriculum and Instruction. In addition, they will take from twelve to twenty-four hours in other professional courses, and a minor of from twenty-four to thirty-six hours in the humanities, the natural sciences, or the social sciences, exclusive of professional education.

The program of work for each candidate must be approved by the Standing Committee for the Ed.D. degree.

DISSERTATION. The candidate must write a dissertation, for which the formalities of presentation, including its defense in a final examination, are the same as those for the Ph.D. degree. The type of dissertation will depend upon which of the following plans the candidate adopts.

Plan "A." A candidate choosing Plan "A" will write a dissertation which is expected to be a mature and competent piece of writing, embodying the results of significant and original research. It must be, in essence, a contribution to knowledge.

Plan "B." A candidate choosing Plan "B" will serve at least a year in an administrative post, or a teaching position in an elementary or secondary school, subsequent to the completion of the second year of residence. His dissertation may be concerned with a problem, or several closely related problems, growing out of this experience. Although the dissertation written under Plan "B" is of a practical nature, it must demonstrate the candidate's ability to investigate and report on a significant phase of education in his major field.

DISSERTATION FEE AND PUBLICATION REQUIREMENT. The dissertation fee and the publication requirement are the same as those for the Ph.D.

General Regulations

SIZE OF CLASSES. Classes which carry graduate credit are limited in size to twenty-five students. In exceptional cases this regulation may be modified, but only by permission of the Executive Committee of the Graduate School Faculty on the recommendation of the department concerned.

GRADING OF GRADUATE STUDENTS. Grades in the Graduate School are as follows: "E," "G," "S," "F," and "Inc." "E" (exceptional) is the highest mark. "G" (good) and "S" (satisfactory) are the remaining passing marks. "F" (failing) is below passing, and "Inc." (incomplete) indicates that some portion of the student's work is missing, for a satisfactory reason, at the time the grades are made out. The professor who gives an "Inc." for a course specifies the date by which time the student must have made up the deficiency. In no case may an extension be granted beyond one calendar year from the date the course ended. If the course is not completed, a statement of "No credit" is made upon the student's record.

CHARGE FOR REQUESTED TRANSCRIPTS. A student who wishes to transfer his credits from Duke University to another institution is entitled to one free transcript of his record. A fee of one dollar, payable in advance, is charged for each additional copy.

TRANSFER OF GRADUATE CREDITS. Credit for graduate course work earned at another institution will be determined only after a student has spent one semester at Duke University. After completing his first semester, the student should file a request that his credits be reviewed and a decision made.

WITHDRAWAL FROM GRADUATE SCHOOL. If a student wishes to withdraw from the Graduate School, he should notify both the Director of Graduate Studies in his major department and the Dean of the Graduate School prior to the date of his expected withdrawal. When withdrawal occurs during the first 14 days of a semester, a refund of tuition and fees less \$25.00 may be made to the student.

WITHDRAWAL FROM GRADUATE COURSES. If a student wishes to withdraw from a graduate course within 14 days of registration he may do so by obtaining the approval of the Director of Graduate Studies in his department. To withdraw after 14 days have elapsed he must have the approval of the instructor of the course, the Director of Graduate Studies in the student's major department, and the Dean of the Graduate School. When the withdrawal is approved, a notation of withdrawal is made on the student's record. If the student withdraws from a course without the requisite approval, an entry of "Dropped Unofficially" is made in his record followed by an F (failing) in the grade column.

GRADUATE CREDIT EARNED BEFORE A.B. DEGREE IS GRANTED. Ordinarily no credit for graduate courses earned before a student has been awarded his A.B. or B.S. degree will be allowed. However an undergraduate student at Duke University, who, at the beginning of a semester, lacks no more than 9 semester hours for fulfilling the requirements for the A.B. or B.S. degree, may obtain permission from the Dean of the Graduate School to enroll for graduate

courses sufficient to bring his total program to fifteen hours a week. Such graduate courses will be credited toward the A.M., M.S., M.Ed., or M.A.T., provided that the student meets the requirements for admission to the Graduate School, and that he is duly registered in the Graduate School at the beginning of that term.

GRADUATE CREDIT FOR COURSES TAKEN IN THE SCHOOL OF LAW. Upon the recommendation of the Director of Graduate Studies, and upon the approval of the Dean of the Graduate School, students in the Social Sciences may take certain courses in the School of Law for graduate credit. In exceptional instances courses in the School of Law may be considered as fulfilling a student's requirements for a minor.

Awards and Fees



Fellowships, Scholarships, and Assistantships

FOR the encouragement and financial assistance of graduate students of marked ability, Duke University has established a considerable number of fellowships, scholarships, and assistantships. The stipends for these range from \$400 to \$2,000. Holders of grants pay tuition and other fees regularly required of all graduate students.

Fellows and scholars pay full tuition and fees and are registered for a full schedule of course work and receive full residence credit. In general, assistants pay four-fifths tuition and fees, are registered for a four-fifths schedule, and receive four-fifths residence credit.

APPLICATION FOR GRANTS. Applications for these grants, along with all supporting documents, must be submitted on or before March 1. Notification of awards is made about April 1. Late applications will be considered, should any vacancies occur in the list of appointees. No appointment is made for longer than one academic year.

Further information and application forms may be obtained from the Dean of the Graduate School, Duke University.

Tuition, Fees, and Expenses

GENERAL FEES IN THE ACADEMIC YEAR. The following table shows the general fees and charges collected from all students. All fees for each semester are due and payable, unless otherwise specified, at the time of registration at the beginning of that semester. No student is admitted to classes until arrangements have been made with the Treasurer of the University for the settlement of fees.

Tuition, per semester.....	\$325.00
General Fee,* per semester.....	60.00
Athletic Fee, not including Federal Tax, Optional, per year, payable in the fall semester	10.00
Room-rent—See detailed statement below.	
Special Dissertation Fee, payable by candidates for the Ph.D. degree, on or before the May 1 preceding the granting of the degree.....	50.00

* General Fees, in lieu of most special charges, include the following fees: Matriculation, Medical, Library, Damage, Commencement, Diploma, and an average of the Laboratory and Materials Fees.

Facilities for Graduate Study



The Libraries and Research Facilities

Graduate students have access to the General Library and the various school and departmental libraries. Such collections total 1,244,880 volumes, including many large and significant special collections. Science laboratories are large and well equipped for general and special research in botany, zoology, physics, chemistry, and medicine. The Duke Forest of eight thousand acres provides a large practical laboratory for forest research. Through the University's co-operative sponsorship of the Oak Ridge Institute of Nuclear Studies, graduate students are able to use the facilities of the National Laboratories at Oak Ridge. A detailed description of the libraries and research facilities is given in the *Bulletin of the Graduate School of Arts and Sciences*.

Graduate Study in the Summer Session

Graduate students who wish to work toward advanced degrees in the Summer Session, particularly in chemistry, economics, education, English, history, mathematics, religion, sociology, Spanish, and zoology will find a wide selection of courses offered by members of the Duke faculty and by visiting professors. Other departments ordinarily offering sequences of work leading to the A.M. degree are botany, political science, and psychology. Thesis research for advanced graduate students is available also in other departments, such as botany, forestry, and physics.

Students who wish to be admitted to the Graduate School for work in the Summer Session, should make application to the Dean of the Graduate School, as well as to the Director of the Summer Session, and should return the completed application, with supporting documents, before June 1, for admission to the first term, and before July 10, for admission to the second term.

Courses of Instruction



Most courses listed in this Bulletin are given on the West Campus. The letter (E) following the description means that the course is offered on the East Campus. In general, courses with odd numbers are offered in the first semester, those with even numbers in the second semester. The courses listed under the headnote to the several departments are those planned at the date of printing the Bulletin. Occasional changes may later be necessary.

AESTHETICS, ART, AND MUSIC

PROFESSOR PATRICK, CHAIRMAN; ASSOCIATE PROFESSORS HALL, MARKMAN, AND SUNDERLAND

AESTHETICS

FOR SENIORS AND GRADUATES

No graduate degree is offered in this department, but the following courses are suggested as possible minors for students majoring in history, literature, philosophy, religion, psychology, or sociology, or in any other interested departments.

In 1957-58 the courses planned are Aesthetics 221-222 and Art 215, 216, 233, 234, and 240.

221-222. HISTORY OF AESTHETICS.—Theories of art and beauty in the western world from antiquity to the present. Some attention will be given the developed theories of aesthetics in the Far East. 6 s.h. (E) PROFESSOR PATRICK

ART

FOR SENIORS AND GRADUATES

215. RELIGIOUS ART OF THE ANCIENT NEAR EAST.—A specialized study of the development of art, particularly architecture and sculpture, as the material expression of religious ideas in Egypt, Mesopotamia, and in part of Syria and Palestine, to the Persian conquest. 3 s.h. (w) ASSOCIATE PROFESSOR MARKMAN

216. RELIGIOUS ART OF THE CLASSICAL WORLD.—A specialized study of the religious art, particularly architecture and sculpture, of Greece and Rome, with special emphasis on the monuments in the Near East. 3 s.h. (w) ASSOCIATE PROFESSOR MARKMAN

217. AEGEAN ART.—A study of the problems of Aegean art as the forerunner of Greek art and in relation to the contemporary civilization of the eastern Mediterranean world. 3 s.h. (w) ASSOCIATE PROFESSOR MARKMAN

218. EARLY GREEK ART.—A study of the problems of the origin and development of Greek art in the Geometric period to the end of the Archaic. 3 s.h. (w) ASSOCIATE PROFESSOR MARKMAN

233. EARLY MEDIAEVAL ARCHITECTURE.—The development of religious architecture from the time of Constantine to the end of the First Romanesque style in the third quarter of the eleventh century. 3 s.h. (E) ASSOCIATE PROFESSOR SUNDERLAND

234. ROMANESQUE SCULPTURE.—The development of sculpture in western Europe from the early Christian period through the culmination of Romanesque art in the west portal of Chartres Cathedral. 3 s.h. (E) ASSOCIATE PROFESSOR SUNDERLAND

240. ARCHITECTURE OF NORTH AMERICA.—A study illustrating the transplantation of European architectural customs since the sixteenth century; the

time-lag in transit and acceptance of later European developments; the gradual assumption of confident independence in design; and the emergence of international leaders in the United States. 3 s.h. (E)

ASSOCIATE PROFESSOR HALL

DIVISION OF ANCIENT LANGUAGES AND LITERATURE

PROFESSORS CLARK, ROGERS, AND STINESPRING; ASSOCIATE PROFESSORS ROSE, TRUESDALE, AND WAY; ASSISTANT PROFESSOR BROWNLEE

GREEK

No graduate degree is presently offered in Greek.

For 1957-58 the course planned is 257.

FOR SENIORS AND GRADUATES

201-202. GREEK TRAGEDY.—6 s.h.

ASSOCIATE PROFESSOR TRUESDALE

257. SOCIAL AND CULTURAL HISTORY OF THE HELLENISTIC WORLD FROM ALEXANDER TO AUGUSTUS.—Lectures, readings, and discussions. This course will not be separately credited without the sequel, Latin 258. 3 s.h.

PROFESSOR ROGERS

Graduate students of Duke University may attend the American School of Classical Studies in Athens, Greece, without charge for tuition, and they are eligible to compete for the fellowships that are offered annually by the School. These consist of two fellowships in Greek archaeology, and one in the language, literature, and history of ancient Greece, each with a stipend of \$2,000. They are awarded mainly on the basis of examinations held in the beginning of February of each year.

LATIN AND ROMAN STUDIES

No graduate degree is presently offered in Latin.

The course planned for 1957-58 is 258.

FOR SENIORS AND GRADUATES

211-212. ROMAN ORATORY.—A survey of the history of Roman oratory, centering about the *Brutus* of Cicero and *Tacitus' Dialogus*. 6 s.h.

PROFESSOR ROGERS

258. SOCIAL AND CULTURAL HISTORY OF THE GRAECO-ROMAN WORLD.—The Roman Empire as the trustee of Hellenism and Christianity, and its own original contributions to modern civilization; lectures, readings, and discussions. This course continues Greek 257 and will not be separately credited. 3 s.h.

PROFESSOR ROGERS

SEMITICS

The courses planned for 1957-58 are 201-202, 207-208, 304, 305.

FOR SENIORS AND GRADUATES

201-202. FIRST HEBREW.—The principles and structure of the Hebrew language, with translations of selected Old Testament narratives. 6 s.h.

PROFESSOR STINESPRING

207-208. SECOND HEBREW.—Samuel or Kings the first semester; Isaiah the second. 6 s.h.

ASSISTANT PROFESSOR BROWNLEE

FOR GRADUATES

304. ARAMAIC.—A study of the Aramaic portions of the Old Testament and selected passages from the Targums, Midrashes, and Talmuds. 3 s.h.

PROFESSOR STINESPRING

305. THIRD HEBREW.—A study of late Hebrew prose, with readings from Chronicles, Ecclesiastes, and the Mishnah. Hours to be arranged. 3 s.h.

PROFESSOR STINESPRING

307. SYRIAC.—A study of the script and grammar, with readings from the Syriac New Testament and other early Christian documents. Some knowledge of Hebrew and Aramaic is prerequisite. 3 s.h.

PROFESSOR STINESPRING

309. HISTORY OF THE ANCIENT NEAR EAST.—A survey of the early civilizations of Egypt, Palestine, Syria, and Mesopotamia in the light of Biblical archaeology. 3 s.h. PROFESSOR STINESPRING

RELATED COURSES IN OTHER DEPARTMENTS

Philosophy 217, Religion 217, 218, 220, 313, 316, 318.

Under the terms of a co-operative agreement graduate students of Duke University may, with the approval of the chairman of their major department, take any graduate course offered by the Departments of Greek and Latin of the University of North Carolina by the payment of a nominal fee. A list of these courses will be sent upon request.

BOTANY

PROFESSOR OOSTING, CHAIRMAN—102A BIOLOGY BUILDING; PROFESSOR KRAMER, DIRECTOR OF GRADUATE STUDIES—04 BIOLOGY BUILDING; PROFESSORS ANDERSON, BLOMQUIST, AND HARRAR; ASSOCIATE PROFESSORS BILLINGS, HUMM, NAYLOR, AND PERRY; ASSISTANT PROFESSORS JOHNSON AND PHILPOTT; DR. CULBERSON

Graduate work in the Department of Botany is offered leading to the A.M. and Ph.D. degrees. Before undertaking graduate study in botany a student should have had in his undergraduate program at least 12 semester hours of botany beyond an elementary course, and related work in biological sciences. Some work in chemistry and physics will be desirable; and for some phases of botanical study, a necessity. The student's graduate program is planned to provide a broad basic training in the various fields of botany, plus intensive specialization in the field of the research problem.

The courses planned for 1957-58 are 203, 204, 218, 221, 224, 225-226, 254, 255, 257, 258, 305, 359-360, 397-398.

FOR SENIORS AND GRADUATES

202. GENETICS.—The principles of heredity, their cytological basis, and their bearing on other fields of biology. Laboratory work involves experimental breeding of the fruit fly and interpretation of data from the breeding of plants. Offered in alternate years. Prerequisites: one year of botany, zoology, or equivalent, and college algebra. 4 s.h. ASSOCIATE PROFESSOR PERRY

203. PLANT CYTOLOGY.—A study of the structure and organization of plant cells in relation to growth, reproduction, and especially heredity. Offered in alternate years. Prerequisite: one year of botany. 4 s.h. PROFESSOR ANDERSON

204. ADVANCED PLANT ANATOMY.—A study of vegetative and reproductive tissue of vascular plants including selection and preparation of fresh plant materials. An analysis of some of the significant literature bearing upon function, development, and phylogeny. Prerequisite: Botany 55 or equivalent. 4 s.h. (E) ASSISTANT PROFESSOR PHILPOTT

216. BOTANICAL MICROTECHNIQUE.—Methods and theory in preparation of plant tissues for temporary mounts and permanent microscopical slides. Prerequisite: Two years of natural science. 4 s.h. (E) ASSISTANT PROFESSOR PHILPOTT

218. ILLUSTRATIVE TECHNIQUES.—A study of botanical illustrative methods, including theory and use of the microscope, microscopical measurements, drawing, photomicrography, botanical photography, darkroom procedures, lantern slides, and the preparation of illustrative material for publication. Prerequisites: two semesters of botany, zoology or forestry. 2 s.h. PROFESSOR ANDERSON

221. INTRODUCTORY MYCOLOGY.—Field and laboratory study of the vegetative and reproductive structures of the fungi and slime molds. Methods of collection, isolation, propagation, and identification of the major orders as represented in the local flora. Prerequisite: A year of biological science. 4 s.h. ASSISTANT PROFESSOR JOHNSON

225-226. SPECIAL PROBLEMS.—Students with adequate training may do special work in the following fields. Credits to be arranged.

(a) MYCOLOGY AND PLANT PATHOLOGY. ASSISTANT PROFESSOR JOHNSON

- (b) CYTOLOGY. ASSOCIATE PROFESSOR ANDERSON
 (c) ECOLOGY. PROFESSOR OOSTING AND ASSOCIATE PROFESSOR BILLINGS
 (d) GENETICS. ASSOCIATE PROFESSOR PERRY
 (e) MORPHOLOGY AND ANATOMY OF HIGHER PLANTS.
 PROFESSOR HARRAR; ASSISTANT PROFESSOR PHILPOTT
 (f) MORPHOLOGY AND TAXONOMY OF LOWER GROUPS.
 PROFESSORS BLOMQUIST AND ANDERSON; DR. CULBERSON
 (g) PHYSIOLOGY. PROFESSOR KRAMER AND ASSOCIATE PROFESSOR NAYLOR
 (i) TAXONOMY OF HIGHER GROUPS. PROFESSOR BLOMQUIST
 (m) MICROBIOLOGY. ASSOCIATE PROFESSOR HUMM

252. PLANT METABOLISM.—The physicochemical processes and conditions underlying the physiological processes of plants. Prerequisite: Botany 151 or equivalent; organic chemistry recommended. 3 s.h. ASSOCIATE PROFESSOR NAYLOR

254. PLANT WATER RELATIONS.—A study of factors affecting the availability of water, its absorption and use in plants, and the effects of water deficits on plant processes. Assigned readings, reports, and lectures. Prerequisite: Botany 151 or equivalent. 3 s.h. PROFESSOR KRAMER

255. ADVANCED TAXONOMY.—A study of the historical background of plant taxonomy, modern concepts and systems of classifications, nomenclatorial problems, and the taxonomy of specialized groups. Prerequisite: two years of botany, including Botany 52 or equivalent. 4 s.h. PROFESSOR BLOMQUIST

256. COMMUNITY ANALYSIS AND CLASSIFICATION.—The development of concepts and methods in synecology and their present application to the study of plant communities. Prerequisite: Botany 156 or equivalent. 3 s.h. PROFESSOR OOSTING

257. PRINCIPLES OF PLANT DISTRIBUTION.—Interpretation of the floristic and ecological plant geography of the world's vegetation. Prerequisite: Botany 156 or equivalent. 3 s.h. ASSOCIATE PROFESSOR BILLINGS

258. PHYSIOLOGY OF GROWTH AND DEVELOPMENT.—Consideration of the internal factors and processes of new protoplasm and its differentiation at the cellular, tissue, and organ level in plants. Prerequisites: Botany 151 or equivalent; organic chemistry recommended. 3 s.h. ASSOCIATE PROFESSOR NAYLOR

259. ENVIRONMENTAL MEASUREMENTS.—Methods of obtaining and evaluating climatological data for ecological purposes with special attention to instrumentation and microclimate. Prerequisite: Botany 156 or equivalent. 3 s.h. ASSOCIATE PROFESSOR BILLINGS

305. VEGETATION OF NORTH AMERICA.—Distribution and limits of the major plant communities, a study in ecological plant geography. Prerequisite: Botany 156 or equivalent. 3 s.h. PROFESSOR OOSTING

310. STRUCTURE AND CLASSIFICATION OF BRYOPHYTES AND PTERIDOPHYTES.—The morphological and systematic characteristics of mosses, liverworts, ferns, and fern allies. 4 s.h. PROFESSOR BLOMQUIST

311. STRUCTURE AND CLASSIFICATION OF ALGAE.—The morphological and ecological characteristics of the common freshwater and marine species and the principles underlying their classification. Collecting, identification, and the making of permanent microscopical preparations. 4 s.h. PROFESSOR BLOMQUIST

359-360. RESEARCH IN BOTANY.—Individual investigation in the various fields of botany. Credits to be arranged.

PROFESSORS ANDERSON, BLOMQUIST, HARRAR, KRAMER, OOSTING;
 ASSOCIATE PROFESSORS BILLINGS, HUMM, NAYLOR, AND PERRY;
 ASSISTANT PROFESSORS JOHNSON AND PHILPOTT

397-398. GENERAL BOTANICAL SEMINAR.—One hour per week throughout the year. Required of all graduates majoring in botany. 2 s.h.

PROFESSORS ANDERSON, BLOMQUIST, HARRAR, KRAMER, OOSTING;
ASSOCIATE PROFESSORS BILLINGS, HUMM, NAYLOR, AND PERRY;
ASSISTANT PROFESSORS JOHNSON AND PHILPOTT

FOREST BOTANY

FOR SENIORS AND GRADUATES

224. FOREST PATHOLOGY.—Infectious and non-infectious diseases of forest trees, and related deterioration of forest products. Field and laboratory study of symptoms, etiology, and control. Prerequisites: Botany 1 and 2. 3 s.h.

ASSISTANT PROFESSOR JOHNSON

253. DENDROLOGY.—Nomenclature, classification, and identification of woody plants with special reference to species indigenous to southeastern United States and other important forest regions of temperate North America. Laboratory and field work. Prerequisite: one year of botany. 3 s.h.

PROFESSOR HARRAR

RELATED COURSES IN OTHER DEPARTMENTS

This related course may be counted toward a major in botany: Forestry 257.

CHEMISTRY

PROFESSOR SAYLOR, CHAIRMAN—115 CHEMISTRY BUILDING, PROFESSOR BRADSHAW, DIRECTOR OF GRADUATE STUDIES—124 CHEMISTRY BUILDING; PROFESSORS BIGELOW, BROWN, GLOCKLER (VISITING LECTURER), GROSS, HAUSER, HILL, HOBBS, AND VOSBURGH;
ASSISTANT PROFESSORS KRIGBAUM, POIRIER, STROBEL, AND WILDER

In the Department of Chemistry graduate work is offered leading to the A.M. and Ph.D. degrees. Before undertaking a graduate program in chemistry, a student should have taken an undergraduate major in chemistry along with related work in mathematics and physics.

Graduate courses in the department are designed to provide a broad basic training in the fields of inorganic, organic, analytical, and physical chemistry. An important requirement for the Ph.D. degree is the successful completion, under the direction of a member of the Staff, of a research program leading to the solution of an original problem. The choice of the research problem, for either the A.M. or the Ph.D. degrees, will determine the field of advanced specialization.

For 1957-58 the courses planned are 206, 215, 216, 233, 234, 251, 261-262, 271, 275, 276, 303, 304, 341, 342, 350, 351-352, 360, 363, 365-366, and 373-374.

FOR SENIORS AND GRADUATES

206. ELEMENTS OF THEORETICAL CHEMISTRY.—A course in the general principles of physical chemistry for students who do not present credit in calculus. Credit is not given for both 206 and 261-262. Three recitations and three laboratory hours. Prerequisites: Chemistry 70, 151, 152, Physics 8 s.h., and Mathematics 6 s.h. With the permission of the Director of Graduate Studies, graduate students from other departments may offer other advanced science courses in lieu of some of these prerequisites. 4 s.h.

PROFESSOR SAYLOR

215. ADVANCED INORGANIC CHEMISTRY.—A study of modern theories of valence and molecular structure and inorganic compounds, particularly the less common types. Prerequisites: Chemistry 261-262, or 206. 3 s.h.

PROFESSORS VOSBURGH AND HILL

216. NUCLEAR CHEMISTRY.—Types and elementary theory of nuclear reactions and the considerations involved in the use of tracers in chemical studies. Prerequisite: Chemistry 261-262; 262 may be taken concurrently. 2 s.h. PROFESSOR HILL

233. INSTRUMENTAL ANALYSIS.—A study of physical measuring instruments in chemical analysis with special attention to optical instruments. One lecture and three laboratory hours per week. Prerequisites: Chemistry 70 and one year of physics. 2 s.h.
ASSISTANT PROFESSOR STROBEL

234. CHEMICAL INSTRUMENTATION.—Discussion of physico-chemical principles as applied to instrumental methods of analysis, illustrated by laboratory experiments, with emphasis on methods involving electrical techniques. One lecture and three laboratory hours per week. Prerequisites: Chemistry 70 and either 261-262 or 206; either of the latter may be taken concurrently. 2 s.h.
ASSISTANT PROFESSOR STROBEL

251. QUALITATIVE ORGANIC ANALYSIS.—Systematic identification of organic compounds, including a study of solubilities and classification reactions. One lecture and three or six laboratory hours per week. Prerequisites: Chemistry 70 and 151, 152. 2 or 3 s.h.
PROFESSOR HAUSER

252. ADVANCED ORGANIC PREPARATIONS.—A laboratory course designed to supplement the student's knowledge of fundamental organic processes by a selected group of laboratory exercises accompanied by oral discussions of techniques and theories pertinent to the experiments. Five hours laboratory and lecture, with lectures in alternate weeks. Prerequisites: Chemistry 70 and 151, 152. 2 s.h.
PROFESSOR BROWN

261-262. PHYSICAL CHEMISTRY.—Fundamentals of general theoretical chemistry illustrated by selected laboratory experiments. Three recitations and three laboratory hours. Prerequisites: Chemistry 70, 151, 152, Physics 8 s.h., Mathematics 51, 52 or equivalent. 8 s.h.
PROFESSOR HOBBS

271. INTRODUCTION TO RESEARCH.—Lectures on the use of chemical literature, research methods, recording and publication of results, and other topics. One lecture per week. 1 s.h.
PROFESSOR BROWN

275, 276. RESEARCH.—The aim of this course is to give instruction in methods used in the investigation of original problems. Individual work and conferences. 2 to 6 s.h..
PROFESSORS BIGELOW, BRADSHAW, BROWN,
GROSS, HAUSER, HILL, HOBBS, SAYLOR,
AND VOSBURGH; ASSISTANT PROFESSORS
KRIGBAUM, STROBEL, AND WILDER

FOR GRADUATES

303. THERMODYNAMICS.—Fundamental laws of thermodynamics and their applications to chemistry and physics. 3 s.h.
PROFESSORS HOBBS AND SAYLOR

304. PHYSICAL CHEMISTRY OF REACTIONS.—The theoretical aspects of reaction kinetics, chemical equilibrium, atomic and molecular forces, and the relation of these to chemical reactions are considered. Prerequisite: Chemistry 261-262. 3 s.h.
PROFESSORS HILL AND HOBBS

341, 342. ADVANCED ORGANIC CHEMISTRY.—Discussion of the theories of organic chemistry with special reference in the first semester to the mechanism of reactions and in the second semester to the synthesis of some of the more complex compounds such as vitamins, hormones, and alkaloids. Undergraduates are admitted to this course only by permission of the Director of Undergraduate Studies. Prerequisite: Chemistry 151, 152. 4 s.h.
PROFESSORS BIGELOW AND HAUSER

350. ORGANIC REACTIONS.—A study of the scope and limitations of the more important types of reactions of organic chemistry from the point of view of their practical use in the synthesis of organic compounds. Lectures and discussion. Prerequisites: Chemistry 251 and 341. 2 s.h.
PROFESSOR BRADSHAW

351-352. ADVANCED SYNTHETIC ORGANIC CHEMISTRY.—Recent advances in certain selected fields, such as the mechanism of organic reactions, medicinals, dyes, perfumes, terpenes, and alkaloids, will be discussed. The emphasis will be placed on structure studies and synthetic methods. Lecture or seminar one hour each week. 2 s.h.
PROFESSORS BIGELOW AND HAUSER

360. POLYMER CHEMISTRY.—A survey of the methods of preparation of high-molecular-weight organic compounds and a study of the properties characteristic of macromolecules in solution and in the solid state. Prerequisite: Chemistry 303. 2 s.h.
ASSISTANT PROFESSOR KRIGBAUM

363. SPECIAL TOPICS IN PHYSICAL AND INORGANIC CHEMISTRY.—Various topics in physical and inorganic chemistry which are of special interest to the staff or students are considered, such as absorption and scattering of light, dielectric phenomena, electrode processes, electrolyte theory, ion exchange, molecular structure, solubility, and valence theory. Prerequisites: Chemistry 261-262, 303 and 304. 2 s.h.
PROFESSORS GLOCKLER, HILL, HOBBS, SAYLOR, AND
VOSBURGH, ASSISTANT PROFESSOR STROBEL

365-366. CHEMICAL PHYSICS, STATISTICAL THEORY.—General introduction to statistical mechanics and applications to chemical problems; solution theory, reaction velocity, changes of state, quantum statistics and the metallic state. Lectures, conferences, and assigned problems. 6 s.h.
ASSISTANT PROFESSOR POIRIER

367-368. CHEMICAL PHYSICS, QUANTUM THEORY OF ATOMIC AND MOLECULAR STRUCTURE.—Theory of atomic and molecular forces and the structure of matter. Lectures, conferences, and assigned problems. 6 s.h.
ASSISTANT PROFESSOR POIRIER

373, 374. SEMINAR.—Required of all graduate students in chemistry. One hour a week discussion. 2 s.h.
PROFESSORS BIGELOW, BRADSHAW, BROWN, GROSS, HOBBS, SAYLOR, AND VOSBURGH; ASSISTANT PROFESSORS
KRIGBAUM, STROBEL, AND WILDER

RELATED COURSES IN OTHER DEPARTMENTS

Biochemistry and Nutrition M241, M242, M243-244, M341, M343-344, M349-350, M351; and Microbiology M322.

CIVIL ENGINEERING

PROFESSOR ROWE, CHAIRMAN—121 ENGINEERING BUILDING; PROFESSOR WILLIAMS;
ASSISTANT PROFESSOR GARDNER

The Department of Civil Engineering offers graduate work leading to the Master of Science Degree. A broad approach is emphasized and fundamental principles are stressed. Narrowly specialized courses are not offered. Each graduate student therefore engages in a program that is designed to give him technical competence in mathematics, physics, or chemistry, and the civil engineering sciences. A student may concentrate on one of the following fields of civil engineering: hydraulic engineering, soils engineering, or structural engineering.

A minimum prerequisite to the graduate program will be mathematics through linear differential equations, mechanics of materials, structural theory and design, fluid mechanics, and location procedure.

COURSES

CE 201. THEORETICAL AND APPLIED MECHANICS.—Introduction to the theory of elasticity, vibrations analysis, and hydrodynamics. (Same course as ME 201.) 3 s.h.
PROFESSORS ROWE AND MACDUFF

CE 202. ADVANCED MECHANICS OF MATERIALS AND EXPERIMENTAL STRESS ANALYSIS.—The analysis of stress and strain in deformable bodies, correlation of theory with data from experiment. Photoelasticity. Strain gages. Similitude. 3 s.h.
PROFESSOR ROWE

CE 231. STRUCTURAL THEORY AND ANALYSIS.—The application of the fundamental theories of structural action to the design and analysis of structural members. The Gauss Scheme. Specifications. Planning of CE projects. 3 s.h.
PROFESSOR ROWE

CE 232. REINFORCED CONCRETE THEORY.—Design and analysis of reinforced concrete members including plates and shells. Prestressed and poststressed concrete members. 3 s.h.
ASSISTANT PROFESSOR GARDNER

CE 235. FOUNDATION ENGINEERING.—The theory and application of soil mechanics to the design and analysis of foundations, subsurface structures, and earth works. 3 s.h. ASSISTANT PROFESSOR GARDNER

CE 242. HYDRAULIC ENGINEERING.—Fundamental principles of flow, effects of gravity, viscosity, compressibility, and surface tension of fluid motion in closed conduits and open channels; surface and form resistance; hydraulic similitude. Fundamentals of applied hydrology. 3 s.h. PROFESSOR WILLIAMS

CE 297-298. THESIS.—Research relating to selected fields of study involving original work extending over two terms. A student with the proper background may carry on research under the direction of the staff in one of the following fields. Thesis credit only. 6 s.h.

- a. Foundation Engineering: ASSISTANT PROFESSOR GARDNER
- b. Hydraulic Engineering: PROFESSOR WILLIAMS
- c. Structural Engineering: PROFESSOR ROWE

ECONOMICS

PROFESSOR HOOVER, CHAIRMAN—320 LIBRARY; PROFESSOR SPENGLER, DIRECTOR OF GRADUATE STUDIES—322 LIBRARY; PROFESSORS BLACK, DE VYVER, HANNA, HUMPHREY, LONDON, RATCHFORD, SIMMONS, AND SMITH; ASSOCIATE PROFESSORS CARTTER AND MCKENZIE; ASSISTANT PROFESSOR DEWEY

Graduate work in the Department of Economics is offered leading to the A.M. and Ph.D. degrees. In order to enter upon graduate work in economics a student should have completed with satisfactory grades at least 12 semester hours of undergraduate work in economics, including 6 hours of Principles of Economics. Among the undergraduate courses of distinct advantage to the graduate student specializing in economics are: General Accounting, Elementary Statistics, and basic courses in philosophy, psychology, the social sciences other than economics, and mathematics.

The fields from among which students working toward a Ph.D. degree in economics may choose for purposes of concentration are: Economic Theory, History of Economic Thought, Demographic and Economic Growth and Change, Economic History, Economic Systems, Industrial and Organizational Economics, International Trade, Labor Economics, Mathematical and Econometrical Economics, Money and Banking, Public Finance, Statistics and National Income, and (occasionally) especially arranged fields. The requirements for the Ph.D. degree in economics normally include (among other things) completion of the work (or its equivalent) making up the first two of these fields, together with two additional fields; Economics 300 and a course in each of four other fields; Economics 237-238, or equivalent work; and three or four courses in one or two minor fields. When circumstances warrant, these requirements are subject to modification. Students electing Statistics and National Income as a field must complete courses in mathematical statistics and probability, or equivalents.

For 1957-58 the following courses are planned for graduate students in economics and related fields: 237, 238, 240, 243, 244, 300, 301, 304, 305, 313, 314, 317 or 319, 320, 365, 386. For 1958-59 the following courses are planned: 237, 238, 240, 243, 244, 300, 301, 313, 314, possibly 317 and 319, 320, 329, 330, 331, 355, 358, 365, 386.

FOR SENIORS AND GRADUATES*

233. STATE AND LOCAL FINANCE.—A study of expenditures, taxation, and financial administration in state and local governments with emphasis on current problems. Special attention will be given to research methods and materials and to the financial relations between state and local governments. 3 s.h.

PROFESSOR RATCHFORD

237-238. STATISTICAL METHODS.—A study of statistical methods appropriate for dealing with problems in business and the social sciences. In addition to

* Graduate students in economics normally will not receive credit for courses 233, 256, and 262. These courses may be taken for credit by non-economics graduate students, with the consent of the instructor.

developing more thoroughly the subjects considered in *Business Statistics*, the following methods will be considered: multiple, partial, and curvilinear correlation; curve fitting; probability; sampling distributions; and statistical inference. Prerequisite: Economics 138 or consent of the instructor. Either semester may be taken for credit. 6 s.h.

PROFESSOR HANNA

240. NATIONAL INCOME.—A critical survey of the conceptual framework and structure of national income and its components, the reliability of national income estimates, and their use in analyzing questions of economic policy. 3 s.h.

PROFESSOR HANNA

243. MATHEMATICAL ECONOMICS.—A systematic survey of mathematical economic theory. The principal topics are conditions of static equilibrium, including stability conditions, dynamic models using difference equations, and linear production models of input-output analysis and activity analysis. 3 s.h.

ASSOCIATE PROFESSOR MCKENZIE

244. INTRODUCTION TO ECONOMETRICS.—The theory of statistical model building in economics. The identifiability of parameters in a system of linear difference equations. The statistical estimation of parameters. The design of dynamic economic models. 3 s.h.

ASSOCIATE PROFESSOR MCKENZIE

256. LABOR LEGISLATION AND SOCIAL INSURANCE.—A study of the relations of the state to labor problems with special reference to remedial legislation, to interference in labor disputes, and to social insurance. 3 s.h.

PROFESSOR DE VYVER

262. TRADE UNIONISM AND COLLECTIVE BARGAINING.—An intensive survey of the trade union as an economic institution is followed by a study of the principles and problems of union-management relationship as found in collective bargaining. 3 s.h.

PROFESSOR DE VYVER

275-276. ADVANCED INDUSTRIAL ACCOUNTING AND MANAGEMENT.—A comprehensive examination of the rationale and techniques of control methods used in industry. Emphasis is laid on a critical evaluation of the practices followed by job-order, process, and standard costing, as well as the economics of overhead costs. Prerequisites: Economics 171-172 and permission of the Department. 6 s.h.

PROFESSOR BLACK

FOR GRADUATES

300. INTRODUCTORY MATHEMATICAL ECONOMICS.—This course is designed to acquaint the student with the role and the use of mathematical and related methods in economic analysis. 3 s.h.

ASSOCIATE PROFESSOR MCKENZIE

301. ECONOMIC ANALYSIS.—Review of contemporary theory relating to consumer behavior, production, the firm, price formation, income distribution, and equilibrium. 3 s.h.

PROFESSOR SPENGLER

304, 305. SEMINAR IN MONEY AND BANKING.—3 s.h. each.

PROFESSOR SIMMONS

311-312. HISTORY OF POLITICAL ECONOMY.—A detailed review of the development of economic theory, the tools of economic analysis, and economics as a science, together with an analysis of the circumstances affecting this development. Period covered: pre-Christian times through 1936. 6 s.h.

PROFESSOR SPENGLER

313-314. SEMINAR IN ECONOMIC THEORY.—The course consists of directed research in economic theory. The primary purpose is the correction of authoritative eclecticism and its replacement by individually integrated theory. Prerequisite: Economics 301 or its equivalent. 6 s.h.

PROFESSOR HOOVER

315. SEMINAR IN ECONOMIC SYSTEMS.—3 s.h.

PROFESSOR HOOVER

316. SEMINAR IN ECONOMIC FUNCTIONS OF THE STATE.—3 s.h.

PROFESSOR HOOVER

317. SEMINAR IN DEMOGRAPHIC, POPULATION, AND RESOURCE PROBLEMS.—3 s.h.

PROFESSOR SPENGLER

318. GENERAL SEMINAR IN ECONOMICS.—All graduate students with economics as a major subject are members of this seminar. Reports of progress in

research will be made, and there will be lectures and critical discussion by members of the Department. Year course. No credit.

ALL MEMBERS OF THE GRADUATE STAFF

319. SEMINAR IN THE THEORY AND THE PROBLEMS OF ECONOMIC GROWTH AND CHANGE.—3 s.h. PROFESSOR SPENGLER

320. SEMINAR IN TRADE CYCLE, EMPLOYMENT, AND INCOME THEORY.—3 s.h. ASSOCIATE PROFESSOR CARTER

329. FEDERAL FINANCE.—A study of the expenditures, revenues, and financial administration of the government of the United States, with emphasis on current problems. Special attention given to budgetary procedure, corporate and individual income taxes, and the financial relations between federal and state governments. Prerequisite: Economics 187 or consent of instructor. 3 s.h. PROFESSOR RATCHFORD

330. SEMINAR IN PUBLIC FINANCE.—3 s.h. PROFESSOR RATCHFORD

331. SEMINAR IN ECONOMIC HISTORY.—3 s.h. PROFESSOR SMITH

355. SEMINAR IN LABOR ECONOMICS.—3 s.h. PROFESSOR DE VYVER

358. SEMINAR IN LABOR MARKET AND RELATED ANALYSIS.—3 s.h. ASSOCIATE PROFESSOR CARTER

365. SEMINAR IN INTERNATIONAL TRADE.—3 s.h. PROFESSOR HUMPHREY

386. SEMINAR IN LATIN-AMERICAN ECONOMIC PROBLEMS.—3 s.h. PROFESSOR SMITH

389. SEMINAR IN INDUSTRIAL AND GOVERNMENTAL PROBLEMS.—3 s.h.

401. SEMINAR ON THE BRITISH COMMONWEALTH.—3 s.h. PROFESSORS SPENGLER, COLE, AND HAMILTON

RELATED COURSES IN OTHER DEPARTMENTS

Courses comprising a candidate's minor may be selected from fields of forestry, history, mathematics, philosophy, physics, political science, psychology, and sociology and anthropology, or from an area that complements the candidate's area of research interests in economics.

EDUCATION

PROFESSOR CARTWRIGHT, CHAIRMAN—08D WEST DUKE BUILDING; PROFESSOR BOLMEIER, DIRECTOR OF GRADUATE STUDIES—08B WEST DUKE BUILDING; PROFESSORS CARR AND HURLBURT; ASSOCIATE PROFESSORS EASLEY, MCLENDON, PETTY, RUDISILL, STUMPF, AND WEITZ; ASSISTANT PROFESSORS COLVER, GEHMAN AND REYNOLDS

Graduate work in Education is offered leading to the A.M., the M.Ed., the M.A.T., and the Ed.D. degrees. For each of these degrees there are specific requirements and prerequisites, all of which may be found stated in detail in this *Bulletin*, pp. 33-45. Departmental requirements and prerequisites for all of these degrees may be obtained from the Director of Graduate Studies. The courses planned for 1957-58 are: 201, 203, 204, 210, 215-216, 217, 224, 225, 226, 228, 234, 235, 240, 241, 242, 243, 244, 246, 248, 266, 276, 334-335.

FOR SENIORS AND GRADUATES

201. TEACHING AND SUPERVISION OF ARITHMETIC.—This course gives special attention to the number system, the fundamental operations (with whole numbers, fractions, and decimals), percentage, and measurements. The course will consider the meaning theory, method of teaching, problem solving, evaluation, practice and drill, and selection and gradation of arithmetical contents. The course is designed for teachers and supervisors in the elementary school. 3 s.h. (E) ASSOCIATE PROFESSOR PETTY

203. PRINCIPLES OF SCHOOL ADMINISTRATION.—The fundamental facts and procedures of school administration, an analysis of the problems and policies of the organization and direction of a local school system, and the functions of the

various school officials. Prerequisites: Education 103 and 88, or six semester hours of equivalent work in education. 3 s.h. (E) PROFESSORS BOLMEIER AND HURLBURT AND ASSOCIATE PROFESSOR STUMPE

205. CURRICULUM PROBLEMS IN SECONDARY EDUCATION.—A consideration of the aims and objectives of secondary-school subjects, emphasizing practical problems of curriculum-making in the high school. 3 s.h. (E)

PROFESSOR CARTWRIGHT

215-216. SECONDARY EDUCATION: PRINCIPLES AND INTERNSHIP.—A one-semester course, the first half of which is devoted to an intensive study of principles, curriculum, and methods in secondary education. The second half consists of supervised internship in public junior or senior high schools. With permission of the Department a full semester may be devoted to the internship and the associated course work offered as a three-hour weekly seminar. Students carrying this course for credit toward a master's degree will be required to take six hours of senior or graduate work in addition to the normal degree requirements. 9 s.h. (E)

PROFESSORS CARTWRIGHT AND HURLBURT

224. TEACHING THE SOCIAL STUDIES IN ELEMENTARY SCHOOLS.—This course will treat objectives, curriculum trends, methods, and materials in elementary-school social studies. Topics to receive emphasis include unit-planning, use of the textbook, the reading program, using community resources, audio-visual materials, dealing with controversial issues, teaching time and place concepts, and evaluation. Opportunity will be provided for teachers to work on their own school problems in the social studies. 3 s.h. (E)

PROFESSOR CARTWRIGHT

225. THE TEACHING OF HISTORY AND THE SOCIAL STUDIES.—Evaluation of the objectives, content, materials, and methods in the teaching of history and the social studies. 3 s.h. (E)

PROFESSOR CARTWRIGHT

226. TEACHING READING IN THE ELEMENTARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to developmental and remedial programs. 3 s.h. (E)

ASSOCIATE PROFESSOR RUDISILL

228. IMPROVEMENT OF INSTRUCTION IN THE SOCIAL STUDIES. An advanced treatment of curriculum, methods, and materials in the Social Studies. Individuals will concentrate on subjects and grade levels of their choice. 3 s.h. (E)

ASSOCIATE PROFESSOR MCLENDON

232. SUPERVISION OF INSTRUCTION.—A survey of supervision as a means of improving instruction and adapting the curriculum to the learner and to community needs. 3 s.h. (E)

PROFESSOR CARR AND ASSOCIATE PROFESSOR MCLENDON

234. SECONDARY-SCHOOL ORGANIZATION AND ADMINISTRATION.—This course is designed especially for principals, teachers, and other prospective members of the secondary-school staff. The scope of secondary education is considered to encompass junior high school, regular high school, senior high, and junior college. Special treatment is given to the problems of internal organization and management. 3 s.h. (E)

PROFESSOR BOLMEIER

236. TEACHING READING IN THE SECONDARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to developmental and remedial programs. The course provides practice with secondary-school children suffering reading retardation, including testing, diagnosis, and daily remedial teaching during a six-week period. For secondary-school teachers of all subjects who wish to improve the reading and study habits of their students. 3 s.h. (E)

ASSOCIATE PROFESSOR RUDISILL

240. EDUCATIONAL AND OCCUPATIONAL INFORMATION.—A study of the sources of occupational and educational information: methods of securing and organizing occupational information; methods of providing vocational and educational information to students through career days, college conferences, class activities, and individual counseling; methods of making job analyses and community occupational surveys. 3 s.h.

ASSISTANT PROFESSOR COLVER

241. **PRINCIPLES OF GUIDANCE.**—An historical survey of the philosophies of guidance; a study of the interrelationships between instruction, administration, and guidance in education. Prerequisite: 6 hours of psychology or educational psychology. 3 s.h.
ASSISTANT PROFESSOR COLVER

242. **MEASUREMENT OF APTITUDES, INTEREST, AND ACHIEVEMENT.**—A study of the theories and principles of psychological measurement as applied to aptitude, interest, and achievement testing. Prerequisite: 12 hours of psychology or educational psychology (6 hours of which may be taken concurrently). 3 s.h. (E)
PROFESSOR KUDER

243. **PERSONALITY DYNAMICS.**—A study of personality structure and dynamics with emphasis upon the implications for counseling and instruction. Prerequisite: 6 hours of psychology or educational psychology. 3 s.h.
ASSISTANT PROFESSOR GEHMAN

244. **COUNSELING TECHNIQUES.**—A study of individual counseling techniques including diagnosis, interviewing, program planning, and counseling evaluation. Prerequisite: Education 242 and 243 or equivalent, which may be taken concurrently. 3 s.h.
ASSISTANT PROFESSOR GEHMAN

246. **THE TEACHING OF MATHEMATICS.**—This course deals with such topics as aims, curriculum, course and lesson planning, and classroom procedure for teaching secondary-school mathematics. 3 s.h. (E) ASSISTANT PROFESSOR REYNOLDS

248. **PRACTICUM IN COUNSELING.**—Practice in individual counseling, including test administration, intake interviewing, diagnosis, counseling, program planning, report preparation, and evaluation. The student will be expected to devote about 150 hours to case work and conferences with his supervisor. Prerequisite: Education 244. 3 s.h.
ASSOCIATE PROFESSOR WEITZ

253. **SCHOOL LAW.**—The primary purpose of this course is to familiarize prospective school administrators and teachers with the legal features of school organization and administration. Although some attention is given to constitutional and statutory provisions, the main emphasis is upon court decisions relating to education. Students are expected to select appropriate problems in school law for intensive study. 3 s.h. (E)
PROFESSOR BOLMEIER

258. **EDUCATIONAL MEASUREMENTS.**—A critical study of the principles and techniques involved in measurement in education, with opportunity for individual research. Prerequisite: twelve semester hours in the Department, including a course in educational psychology. 3 s.h. (E)
ASSOCIATE PROFESSOR WEITZ

266. **SCIENCE IN THE ELEMENTARY SCHOOL.**—Presentation of basic concepts in natural and physical science through selected readings, the use of simple experiments and demonstrations, construction and use of equipment, and field studies. 3 s.h.
ASSISTANT PROFESSOR REYNOLDS

276. **THE TEACHING OF HIGH-SCHOOL SCIENCE.**—Discussion, lectures and collateral reading, related to such topics as aims, tests, curriculum, classroom and laboratory procedure, field trips, course and lesson planning for secondary-school science. 3 s.h. (E)
ASSISTANT PROFESSOR REYNOLDS

290. **ADMINISTRATION OF SCHOOL PROPERTY.**—Planning and management of the school plant and its equipment to meet instructional, health, and community needs for immediate and long-range purposes. This course is intended for teachers, principals, and superintendents. Areas to be treated will include site selection; trends in design, lighting, ventilation, and heating; custodial service and maintenance; and financing. 3 s.h. (E)
ASSOCIATE PROFESSOR STUMPF

FOR GRADUATES

204. **THE SCHOOL AS AN INSTITUTION.**—Consideration is given to the place of the school in the American social order, and its adaptation to social, economic, and political changes. Special attention is directed to the responsibility (1) of the school for seeking solutions to the perplexing problems of youth created by a chang-

ing society; and (2) of the government for providing greater equality of educational opportunities. Open to graduate students only. 3 s.h. (E)

PROFESSOR BOLMEIER AND ASSOCIATE PROFESSOR MCLENDON

210. INTRODUCTION TO EDUCATIONAL RESEARCH.—The general purpose of this course is to give the student an overview of research, acquaint him with the nature of research processes, and develop within him an understanding of the essential characteristics of good research work. The course is designed to be liberalizing as well as technical. Open to graduate students only. 3 s.h. (E)

ASSOCIATE PROFESSOR STUMPF

217. THE PSYCHOLOGICAL PRINCIPLES OF EDUCATION.—An advanced study of teaching, learning, and the learner. Selected problems guiding the reading of students will be discussed in class. Open to graduate students only. 3 s.h. (E)

ASSOCIATE PROFESSORS EASLEY AND WEITZ

235. THE NATURE, FUNCTION, AND REORGANIZATION OF THE CURRICULUM.—Selected problems guiding the reading of students. Open to graduate students only. 3 s.h. (E)

PROFESSORS CARR AND CARTWRIGHT

334-335. SEMINAR IN SCHOOL ADMINISTRATION.—Research, field observation, and reports on significant problems in educational administration. The work will be designed to integrate knowledge and skill in such areas as personnel, finance, property, law, curriculum, and public relations. 6 s.h. each semester. (E)

PROFESSORS BOLMEIER, HURLBURT;

ASSOCIATE PROFESSORS PETTY AND STUMPF

ELECTRICAL ENGINEERING

ASSOCIATE PROFESSOR VAIL, CHAIRMAN AND DIRECTOR OF GRADUATE STUDIES—131 ENGINEERING; ASSOCIATE PROFESSOR MEIER; ASSISTANT PROFESSORS ARTLEY AND OWEN

The Department of Electrical Engineering offers graduate work leading to the degree of Master of Science. Students may specialize in any of the following fields: dielectric materials; ferromagnetic materials; energy conversion; instrumentation; high voltage phenomena. The major requirement of 12 semester hours in electrical engineering is normally met by taking courses EE 201 and EE 202, plus two other courses which are so selected as to provide background for the specialized thesis research. The minor requirement of 12 semester hours outside of engineering is normally met by Mathematics 285, 286 and Physics 213-214.

A minimum prerequisite to the graduate courses in electrical engineering is a basic knowledge of differential equations, electric and magnetic field theory, and the theory of networks.

EE 201. ENERGY SYSTEMS.—Consideration of general concepts of energy storage, transfer, transformation, and control that are applicable to a wide variety of technical systems, with emphasis on their common mathematical structure. Included are electrical, magnetic, mechanical, hydraulic, aerodynamic, and thermal systems. Applications to specific engineering devices and machines. Prerequisite: permission of instructor. 3 s.h.

ASSISTANT PROFESSOR ARTLEY

EE 202. INFORMATION SYSTEMS.—Consideration of general concepts of information storage, transfer, and processing. Optimum total response of information handling systems, including considerations of stability and dynamic response in the time and frequency domains. Applications to communications networks and devices, including an introduction to computers. Prerequisite: permission of instructor. 3 s.h.

ASSISTANT PROFESSOR OWEN

EE 211. SOLID STATE ENGINEERING.—An introduction to concepts and engineering applications of solid state physics: crystalline structure and thermal properties of solids; insulators, semiconductors, and conductors; magnetic materials. Prerequisite: permission of instructor. 3 s.h.

ASSOCIATE PROFESSOR VAIL

EE 231. NUCLEAR ENGINEERING.—Review of nuclear physics; fission and the chain reaction; nuclear reactor principles; materials, instrumentation, and control of nuclear reactors; selected applications and techniques of nuclear engineering. Prerequisite: permission of instructor. 3 s.h.

ASSOCIATE PROFESSOR MEIER

EE 259. ADVANCED ELECTRICAL ENERGY CONVERSION.—Advanced theory of rotating electric machines; direct and quadrature axis components; equivalent circuits; symmetrical components; transients in machine systems. Prerequisite: An advanced course in electric machinery and permission of instructor. 3 s.h.

ASSOCIATE PROFESSOR MEIER

EE 265. ADVANCED TOPICS IN COMMUNICATIONS.—Special problems dealing in the design and application of devices and systems in communications engineering. Prerequisite: An advanced course in electronic networks. 3 s.h.

ASSISTANT PROFESSOR OWEN

EE 297-298. THESIS RESEARCH.—A student with the proper background may carry on research under direction of a member of the staff in one of the following fields. Thesis credit only. 6 s.h.

(a) DIELECTRIC AND MAGNETIC MATERIALS

ASSOCIATE PROFESSOR VAIL AND

ASSISTANT PROFESSOR ARTLEY

(b) INSTRUMENTATION.

ASSISTANT PROFESSOR OWEN

(c) ENERGY CONVERSION.

ASSOCIATE PROFESSOR MEIER

ENGLISH

PROFESSOR WARD, CHAIRMAN—325 ALLEN; PROFESSOR BOYCE, DIRECTOR OF GRADUATE STUDIES—401 ALLEN; PROFESSORS BRINKLEY, GILBERT, GOHDES, IRVING, SANDERS, STEVENSON AND TURNER, AND ASSOCIATE PROFESSOR FISHER

The department offers graduate work leading to the A.M. and Ph.D. degrees. Students intending to major in English should have taken enough undergraduate courses in literature to enable them to pursue graduate studies profitably. To satisfy the requirements for the A.M. degree a student must (a) elect 207-208 (3 or 6 semester hours); and 21 (or 18) additional semester hours; and (b) write a thesis. A statement of the requirements for the Ph.D. degree may be obtained from the Director of Graduate Studies.

In 1957-58 the courses offered are 207-208, 215, 217, 223, 224, 229, 230, 233, 234, 239, 251, 252, 311, 312, 375, 376, 379, 380, 391, 392.

FOR SENIORS AND GRADUATES

203, 204. CHAUCER.—Reading and interpretation of the text; in the first semester, the minor poems and *Troilus*; in the second, the *Canterbury Tales*. 6 s.h.

ASSOCIATE PROFESSOR FISHER

207-208. HISTORY OF THE ENGLISH LANGUAGE.—A survey of the language from Old to Present English, taking into consideration developments in phonology, morphology, syntax, and vocabulary. 6 s.h.

ASSOCIATE PROFESSOR FISHER

215, 216. ELIZABETHAN DRAMA.—Careful study of one or two major dramatists (Jonson or Beaumont and Fletcher) and extensive reading in the other writers (Heywood, Ford, Massinger, Marlowe, Middleton) with emphasis on the nature and qualities of their work in relation to its historical background. 6 s.h.

PROFESSOR GILBERT

217. MILTON.—Milton's poetry and prose, with emphasis on the major poems. 3 s.h.

PROFESSORS BRINKLEY AND GILBERT

218. SPENSER.—The reading of Spenser's work, with chief attention to *The Faerie Queene*. 3 s.h.

PROFESSOR GILBERT

219, 220. THE EIGHTEENTH CENTURY.—Swift, Pope, Defoe, Addison, Steele, and others are studied in the first semester; in the second, Gray, Johnson, Boswell, Collins, Goldsmith, the novelists, and other writers. PROFESSORS BOYCE AND IRVING

221, 222. ENGLISH LITERATURE OF THE EARLY NINETEENTH CENTURY.—The British Romantic poets and prose writers from Scott to the early Carlyle, with special attention to Wordsworth, Coleridge, and Keats. 6 s.h.

PROFESSORS SANDERS AND STEVENSON

223, 224. ENGLISH LITERATURE OF THE LATER NINETEENTH CENTURY.—The first semester is devoted chiefly to Carlyle, Dickens, Thackeray, Tennyson, and Browning; the second semester to Arnold, Ruskin, Pater, George Eliot, Meredith, the Pre-Raphaelites, and Swinburne. 6 s.h. PROFESSOR STEVENSON

227. LITERARY CRITICISM.—A study of the Greek and Roman critics, in chronological order but with emphasis on their permanent value rather than on the mere history; also of the Continental and English critics to about 1700. 3 s.h. PROFESSOR GILBERT

229, 230.—AMERICAN LITERATURE, 1800-1870.—The writers emphasized in the first semester are Emerson, Thoreau, and Hawthorne; in the second semester, Poe and Melville. 6 s.h. PROFESSOR TURNER

231. EMERSON.—A study of Emerson's ideas as reflected in selected examples of his essays and poems. 3 s.h. PROFESSOR GOHDES

232. WHITMAN.—A detailed study of *Leaves of Grass* and of selected prose works. 3 s.h. PROFESSOR GOHDES

233. AMERICAN LITERATURE 1870-1900.—Selected works of the chief authors of the period, including Whitman, Lanier, Mark Twain, James, Howells, Crane, and Emily Dickinson. The lectures will deal with the social background as well as the literary trends and the careers of the major authors. 3 s.h. PROFESSOR GOHDES

234. AMERICAN LITERATURE OF THE TWENTIETH CENTURY.—Selected works of representative authors, including Dreiser, Edith Wharton, Mencken, Lewis, Willa Cather, O'Neill, Robinson, Frost, Eliot, Hemingway, and Faulkner. The lectures will deal primarily with literary trends as shaped by the social background. 3 s.h. PROFESSOR GOHDES

237. ENGLISH DRAMA, 1642-1800.—The heroic play and the comedy of manners of the Restoration; the important plays, serious and comic, of the eighteenth century. 3 s.h. PROFESSOR WARD

239. SHAKESPEARE.—A study of the plays and poems, with attention to sources, earlier criticism, and the work of Shakespeare's contemporaries. 3 s.h. PROFESSOR GILBERT

251, 252. ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY.—A survey of the major works in prose, poetry, and drama from 1600 to the death of Dryden. 6 s.h. PROFESSOR WARD

262. ENGLISH LITERATURE OF THE EARLY TWENTIETH CENTURY.—Representative work of leading writers from 1900 to 1930, in the fields of fiction, drama, poetry, and essay. Critical analysis of selected specimens, and discussion of types, themes, and trends. 3 s.h. PROFESSOR STEVENSON

269, 270. SOUTHERN LITERATURE.—The principal authors and the chief literary development from the beginning to the present. Emphasis in the first semester is on Byrd, Kennedy, Simms, Poe, Timrod, and the humorists; in the second on Lanier, Harris, Cable, Mark Twain, Ellen Glasgow, and Faulkner. Attention is given to the historical and cultural background and to literary relations extending outside the region. 6 s.h. PROFESSOR TURNER

273. HAWTHORNE AND MELVILLE.—Extensive reading in the works of Hawthorne and Melville, and close study of selected writings. 3 s.h. PROFESSOR TURNER

274. AMERICAN HUMOR.—The development of the native tradition in the Down-East humorists and the humorists of the Old Southwest. Extensive reading in Mark Twain and his contemporaries, and some attention to the continuation of the tradition after Mark Twain. 3 s.h. PROFESSOR TURNER

FOR GRADUATES

304. STUDIES IN THE METAPHYSICAL POETS.—A careful study of Donne, Herbert, and Vaughan against the seventeenth century background, with some attention to their influence on other writers in the period and their impact on twentieth century poetry. 3 s.h. PROFESSOR BRINKLEY

311. BEOWULF.—Reading and interpretation of the text. 3 s.h.

ASSOCIATE PROFESSOR FISHER

312. EARLIER MIDDLE ENGLISH LITERATURE.—Linguistic and literary analysis of selected texts from 1200 to 1350, with attention to the Middle English dialects. 3 s.h.

ASSOCIATE PROFESSOR FISHER

315, 316. LATER MIDDLE ENGLISH LITERATURE.—Reading and interpretation of the texts of the literature from 1350 to 1500, exclusive of Chaucer. Emphasis in the first term on Wyclif, Gower, the *Pearl* Poet, *Piers Plowman*; in the second, on Lydgate, the Scottish Chaucerians, Malory, the Middle English drama, carols. 6 s.h. To be offered in 1958-59.

ASSOCIATE PROFESSOR FISHER

345. THE EIGHTEENTH-CENTURY NOVEL.—Richardson, Fielding, Smollett, and Sterne are emphasized. Attention is given to earlier prose fiction and to other contributing literary patterns. 3 s.h.

PROFESSOR BOYCE

375, 376. SEMINAR IN THE SIXTEENTH AND SEVENTEENTH CENTURIES. 6 s.h.

PROFESSORS GILBERT AND WARD

377. SEMINAR IN THE EIGHTEENTH CENTURY. 3 s.h.

PROFESSOR BOYCE

378. SEMINAR: SAMUEL JOHNSON'S LITERARY CRITICISM AND RELATED TOPICS. 3 s.h.

PROFESSOR BOYCE

379, 380. SEMINAR IN THE EARLY NINETEENTH CENTURY. 6 s.h.

PROFESSOR STEVENSON

381, 382. SEMINAR IN THE LATER NINETEENTH CENTURY. 6 s.h.

PROFESSOR STEVENSON

391, 392. SEMINAR IN AMERICAN LITERATURE. 6 s.h.

PROFESSORS GOHDES AND TURNER

FORESTRY

PROFESSOR KORSTIAN, CHAIRMAN AND DIRECTOR OF GRADUATE STUDIES—308 SOCIAL SCIENCE; PROFESSORS HARRAR, KRAMER, AND SCHUMACHER; ASSOCIATE PROFESSOR ANDERSON; ASSISTANT PROFESSORS JOHNSON AND RALSTON

Major and minor work is offered in the scientific aspects of forestry leading to the Master of Arts and Doctor of Philosophy degrees. Work for these degrees may be pursued only in forest-tree physiology, wood anatomy and properties, forest pathology, silvics, forest soils, forest mensuration, forest entomology, and forest economics. College graduates who have had specialized training in botany or soil science and in allied basic subjects, such as physics, chemistry, geology, and zoology, may pursue graduate study and research only in the specialized fields for which their previous work has qualified them. Students who do not have previous training in forestry will be required to complete a minimum of thirty semester hours of approved work in forestry as a preliminary requirement to advanced study for the A.M. and Ph.D. degrees. The holders of these degrees will not be regarded as professionally trained foresters. For information on professional training in forestry, see *Bulletin of the School of Forestry*. For detailed information concerning admission to the Graduate School and for regulations governing candidacy for the A.M. and Ph.D. degrees and for other regulations, consult the proper pages in this *Bulletin*.

FOR SENIORS AND GRADUATES

224. FOREST PATHOLOGY.—Infectious and non-infectious diseases of forest trees, and related deterioration of forest products. Field and laboratory study of symptoms, etiology, and control. Prerequisites: Botany 1 and 2, or equivalent. 3 s.h.

ASSISTANT PROFESSOR JOHNSON

231. FOREST ENTOMOLOGY.—Morphology, general classification, life histories, and control of insects injurious to forest trees, logs, and lumber. 3 s.h.

ASSOCIATE PROFESSOR ANDERSON

251. **SAMPLING METHODS IN FORESTRY.**—Statistical background for solution of sampling problems with special reference to sample inventory of a forest property. Offered both semesters. Prerequisite: Forestry S151. 3 s.h.

PROFESSOR SCHUMACHER

252. **FOREST MENSURATION.**—Empirical equation and curve fitting appropriate for construction of timber yield tables, tree volume and taper tables; significance tests and graphical solution of equations. Assignments require operation of calculating machines. Prerequisite: Forestry 251. 3 s.h. PROFESSOR SCHUMACHER

253. **DENDROLOGY.**—Nomenclature, classification, and identification of woody plants with special reference to species indigenous to southeastern United States and other important forest regions of temperate North America. Laboratory and field work. Prerequisite: one year of biology. 3 s.h.

PROFESSOR HARRAR

257. **DESIGN OF FORESTRY EXPERIMENTS AND ANALYSIS OF DATA.**—Role of experimental design in field and laboratory, and statistical analysis of data as aspects of scientific method in forest research. 5 s.h.

PROFESSOR SCHUMACHER

259. **PROPERTIES OF WOOD.**—The chemical nature of wood substance and its industrial chemical derivatives. Wood-moisture relationships; pertinent non-mechanical physical properties; mechanical properties and factors affecting the strength of wood; standard timber testing procedures. Uses of woods as determined by their properties. Prerequisites: one year of college chemistry; one course in college physics. 3 s.h.

PROFESSOR HARRAR

260. **WOOD ANATOMY.**—Study of the physical features and the gross and minute structural characteristics of wood leading to the identification of the commercial woods of the United States, and the important tropical woods used in American wood-working industries. Elementary microtechnique. Prerequisite: one year of biology. 3 s.h.

PROFESSOR HARRAR

261. **FOREST SOILS.**—Origin, development, and classification of soils with special emphasis on those developed in humid climates; morphological, physical, and chemical properties of soils in relation to growth of trees; effect of forests on soils. Prerequisites: Chemistry 1 and 2, and Physics 1, or equivalents; physical geology, mineralogy, petrology, and analytical chemistry are also desirable. 3 s.h.

ASSISTANT PROFESSOR RALSTON

264. **SILVICS.**—Ecological foundations of silviculture with special reference to forest site factors; influence of forests on their environment; growth and development of trees and stands; origin, development, and classification of forest communities; methods of studying forest environments. Desirable prerequisites: plant physiology, plant ecology, and Forestry 261, or equivalent. 3 s.h.

ASSISTANT PROFESSOR RALSTON

276. **FORESTRY POLICY.**—Objective study and analysis of the development of public land and forestry policies in the United States, present policies of public and private forestry organizations, and current policy issues in the light of economic and other criteria. 2 s.h.

277. **ECONOMICS OF FORESTRY.**—Principles of economics used in the analysis of factors affecting the supply of forest products, pricing of stumpage and primary forest products, factors affecting the demand for forest products, economic characteristics and problems of the major forest products industries, analysis of such specific private forestry problems as marketing, forest ownership pattern, taxation, credit, risk, and economic fluctuations. Prerequisite: at least one course in the principles of economics. 3 s.h.

FOR GRADUATES

326. **ADVANCED FOREST SOILS.**—Interrelations of the physical, chemical, and biological characteristics of forest and range soils. Prerequisites: analytical chemistry and Forestry 261. 3 s.h.

ASSISTANT PROFESSOR RALSTON

356. **SEMINAR IN FOREST ECONOMICS.**—Examination and discussion of the application of economic concepts in forestry, the potential contribution of economic analysis to private and public forest management; current research in forest economics. Prerequisite: Forestry 277 or equivalent; courses in economic theory are desirable. 2 s.h.

357, 358. RESEARCH IN FORESTRY.—Credits to be arranged. Students who have had adequate training may do research under direction of members of the Faculty in the following branches of forestry:

- a. SILVICS.—Prerequisites: Forestry 254, 261, and 264, or equivalents.
PROFESSOR KORSTIAN
- b. FOREST SOILS.—Prerequisite: Forestry 261 or equivalent.
ASSISTANT PROFESSOR RALSTON
- c. FOREST ECONOMICS.—Prerequisite: Forestry 277 or equivalent.
- f. PROPERTIES OF WOOD.—Prerequisites: Forestry 259 and 260, or equivalents.
PROFESSOR HARRAR
- g. FOREST MENSURATION.—Prerequisites: Forestry S151, 251, and 252, or equivalents.
PROFESSOR SCHUMACHER
- h. FOREST ENTOMOLOGY.—Prerequisite: Forestry 231 or equivalent.
ASSOCIATE PROFESSOR ANDERSON
- k. PHYSIOLOGY OF FOREST TREES.—Prerequisites: Plant physiology and plant ecology or silvics.
PROFESSOR KRAMER
- l. FOREST PATHOLOGY.—Prerequisites: Plant physiology and Forestry 224 or equivalent.
ASSISTANT PROFESSOR JOHNSON

GERMANIC LANGUAGES AND LITERATURE

PROFESSOR SALINGER, CHAIRMAN AND DIRECTOR OF GRADUATE STUDIES—301C GRAY;
PROFESSORS SHEARS AND TARABA

The Department of German offers graduate work leading to the A.M. degree. Students who expect to major in German should have had sufficient undergraduate courses in Germanic languages to enable them to proceed to more advanced work.

Students who wish to take courses in German for a minor should normally have completed a third-year course (in exceptional cases, a second-year) of College German with acceptable grades.

For 1957-58 the courses planned are 205, 206, 213, 214.

201, 202. GOETHE.—A study of his life and works, in the light of his lasting significance to World Literature. 6 s.h. PROFESSOR SALINGER

203, 204. EIGHTEENTH CENTURY.—Eighteenth-century German literature in its relation to contemporary European philosophy. 6 s.h. PROFESSOR SALINGER

205, 206. MIDDLE HIGH GERMAN.—The language and literature of Germany's first classical period. 6 s.h. PROFESSOR TARABA

207, 208. GERMAN ROMANTICISM.—The course covers the entire field of German Romanticism from 1800 to 1850. 6 s.h. PROFESSOR SALINGER

209, 210. KLEIST, GRILLPARZER, AND HEBBEL.—The development of the drama in Germany and Austria between Schiller and naturalism. 6 s.h. PROFESSOR SALINGER

211, 212. HEINRICH HEINE.—A study of the German poet and his immediate successors in the movement known as *Jungdeutschland*. 6 s.h. PROFESSOR SALINGER

213, 214. LITERATURE OF THE EMPIRE, 1871-1914.—A study of the literature of this period with special emphasis on a few leading writers such as Fontane, Hauptmann, Mann, Hesse, Rilke, Werfel and the Expressionists.

PROFESSORS SHEARS AND SALINGER

RELATED COURSES IN OTHER DEPARTMENTS

The following courses in other departments are recommended to students, who are majoring in Germanics, as particularly valuable in building a proper background for Germanic studies:

(a) Graduate courses in literature or philology, offered by the ancient and modern language departments, to be selected after consultation with the Germanic Department.

(b) Graduate courses in history and philosophy, offered by those departments, to be selected after consultation with the Germanic Department.

HISTORY

PROFESSOR CARROLL, CHAIRMAN—235 ALLEN; PROFESSOR WOODY, DIRECTOR OF GRADUATE STUDIES—231 ALLEN; PROFESSORS ALDEN, CLYDE, CURTISS, HAMILTON, LANNING, AND MANCHESTER; ASSOCIATE PROFESSORS FERGUSON, NELSON, PARKER, ROPP, AND WATSON; ASSISTANT PROFESSOR STEVENS

A student who intends to work for an A.M. degree in history must present a total of eighteen semester hours of credit for undergraduate courses in history, of which six hours must be in American History if he plans to take his major in that field.

A candidate for the degree of Doctor of Philosophy in history is required to prepare himself in four fields of history, one of which must be in American history and another in the history of Western Europe. The choice and delimitation of fields is determined in consultation with his supervisor and the Director of Graduate Studies. The Department offers graduate instruction in the following fields: Western Europe; American history; Great Britain; Latin America; American Foreign Relations; the Far East in the modern period; Russia; Military history.

Students may receive credit for either semester of a hyphenated course without taking the other semester if they obtain written permission from the instructor and the Director of Graduate Studies.

For 1957-58 the courses planned are as follows: 205-206, 213-214, 217-218, 221-222, 227, 228, 233-234, 235, 236, 243-244, 261-262, 263-264, 265, 266, 267, 268, 269, 270, 305, 309, 312, 315, 317, 320, 321, 343, 401.

FOR SENIORS AND GRADUATES

203-204. THE UNITED STATES, 1850-1900.—The rise of sectionalism, secession, wartime problems of the Union and Confederacy, political and economic adjustments of Reconstruction, the status of the Negro, the New South, problems of capital and labor, the agrarian revolt, political parties and reform. 6 s.h. PROFESSOR WOODY

205-206. THE UNITED STATES IN THE TWENTIETH CENTURY.—The emergence of the United States as a major power; attention is focused on domestic developments and conflicting theories of expansion and federal power. Emphasis in the first semester is on the progressive era and the first World War; the second semester is devoted to the twenties and to the Franklin Roosevelt administration. 6 s.h. ASSOCIATE PROFESSOR WATSON

209-210. CONSTITUTIONAL HISTORY OF THE UNITED STATES, 1760 TO THE PRESENT.—A study of the basic problems in forming the Constitution; of its development through the major crises in the history of the United States; of the effects of changing social, cultural, economic, and political conditions on the Constitution. 6 s.h. ASSISTANT PROFESSOR STEVENS

213-214. THE OLD SOUTH.—Political thought and party trends from Jefferson to Calhoun; agriculture, slavery, expansion; commerce, manufacturing, transportation; urban life, religion, education; the rise of Southern nationalism. 6 s.h. PROFESSOR WOODY

215-216. FOREIGN POLICY AND DIPLOMACY OF THE UNITED STATES.—The work in the first semester, covering the period 1775-1877, deals with such topics as the origins and evolution of basic foreign policies; isolation from Europe; paramount interests in Latin America, including the Monroe Doctrine; international co-operation in the Far East. The work in the second semester, covering the period since 1877, deals with such topics as the rise of the new Manifest Destiny; beginnings of American imperialism in Latin America and the Far East; the failure of

traditional neutrality in the first World War; postwar conflicts between isolation and collective security; involvement in the second World War. 6 s.h.

PROFESSOR CLYDE

217, 218. EUROPE SINCE 1870.—International relations since the Franco-German War is the chief subject of study in this course; special emphasis is placed upon the underlying economic and political influences. 6 s.h.

PROFESSOR CARROLL

221-222. THE AGE OF THE RENAISSANCE.—The decline of characteristic features of medieval civilization and the rise of modern European institutions with particular attention to intellectual movements from Dante to Erasmus. 6 s.h.

ASSOCIATE PROFESSOR NELSON

225-226. THE AGE OF THE REFORMATION.—A survey of European civilization from 1500 through the Peace of Westphalia. 6 s.h.

ASSOCIATE PROFESSOR NELSON

227, 228. EUROPE IN THE NINETEENTH CENTURY.—A study, beginning with the career of Napoleon Bonaparte, of the forces and personalities influential in the nineteenth century. Emphasis in the first semester is on the problems of the biographer; in the second, on those of a student of national communities. 6 s.h.

ASSOCIATE PROFESSOR PARKER

231-232. THE HISPANIC COLONIES AND REPUBLICS IN AMERICA.—The development of the Iberian states as colonizing powers, the conquest of America, the Spanish treatment of the Indian, the contest between Spain and other European nations over America, the independence movement, the struggle for stable government, the rise of liberalism with special emphasis upon Mexico from the Revolution of 1910 to the present, and basic inter-American developments. 6 s.h.

PROFESSOR LANNING

233-234. THE INSTITUTIONAL, CULTURAL, AND SOCIAL HISTORY OF HISPANIC AMERICA.—The first semester of this course deals with subject races, the development of mixed breeds, the governmental system, the Church and the Inquisition, and Spanish culture with emphasis upon university subjects. In the second semester the work deals with the political ideas of the wars of independence, revolution and dictatorship, the rise of public education, public health, land reform, and proletarian movements. 6 s.h.

PROFESSOR LANNING

235, 236. EUROPEAN EXPANSION OVERSEAS.—In the first semester attention is given to the age of discovery and to the origin and development of the great European overseas empires with special emphasis on the role of the Portuguese in India and the Americas. The work of the second semester deals with the decline of the mercantile empires, the emergence of independent centers of European culture overseas (Brazil being taken as one example), and the revival of mercantile imperialism in the late nineteenth and the twentieth centuries. 6 s.h.

PROFESSOR MANCHESTER

241-242. THE FAR EAST.—The history of the Western impact on Eastern Asia in the 19th and 20th centuries. Emphasis is placed on such matters as commercial and colonial expansion, the opening of China and Japan, the development by the Western Powers and Japan of colonial, imperialistic, and nationalistic interests, and the rise of Communist power in Asia. 6 s.h.

PROFESSOR CLYDE

243-244. THE UNITED STATES AND THE FAR EAST.—An historical analysis of American relations with the peoples of Eastern Asia during the 19th and 20th centuries. 6 s.h.

PROFESSOR CLYDE

245-246. WAR IN THE MODERN WORLD.—This course is concerned with the relations between warfare and modern political, economic and social conditions. Special attention is given to the development of British and American military methods and to the events of the American Civil War and the two World Wars. The work in the first semester deals with Clausewitz's theories of warfare and the period from the introduction of gunpowder to 1871; in the second semester there is a more detailed analysis of recent land, sea, and air warfare. 6 s.h.

ASSOCIATE PROFESSOR ROPP

261-262. RUSSIA IN THE TWENTIETH CENTURY.—A study of the background of the Revolution of 1917 followed by an analysis of the history and policies of the Soviet state. 6 s.h. PROFESSOR CURTISS

263-264. AMERICAN COLONIAL HISTORY AND THE REVOLUTION, 1607-1789.—The founding and institutional development of the English colonies; the background, progress, and results of the Revolution. 6 s.h. PROFESSOR ALDEN

265, 266. THE WESTWARD MOVEMENT IN THE UNITED STATES.—Settlement from the Atlantic to the Pacific and beyond; frontier problems of colonization, land systems, economy, law and government; interactions of frontier and metropolis, the first semester emphasizes the West in the colonial period, Revolution, and formation of the union; the second semester stresses sectionalism, slavery, expansion and the Civil War, the modern West, and contemporary problems. 6 s.h. ASSISTANT PROFESSOR STEVENS

267, 268. ENGLAND FROM EDWARD III TO ANNE.—The transition from medieval to modern England, the English Renaissance, and the political, social, and intellectual problems of the seventeenth century. 6 s.h. ASSOCIATE PROFESSOR FERGUSON

269. BRITISH HISTORY FROM 1714 to 1867.—The interrelationship of the leadership of such men as Walpole, Chatham, Pitt, and Peel with war, revolution, and social institutions; the rise of the cabinet system; the Industrial Revolution, imperial changes; and reform. 3 s.h. PROFESSOR HAMILTON

270. GREAT BRITAIN AND THE COMMONWEALTH OF NATIONS, 1867 TO THE PRESENT.—A history of Great Britain at the height of her world dominance and beyond, her oceanic empire, and the evolution of that empire into a unique world-wide Commonwealth of Nations. 3 s.h. PROFESSOR HAMILTON

FOR GRADUATES

305. SEMINAR IN THE HISTORY OF ENGLAND AND THE BRITISH EMPIRE.—The work consists of practical training in the methods of historical research based on sources for modern British history. Year course. 2 s.h. PROFESSOR HAMILTON

309. SEMINAR IN AMERICAN COLONIAL AND REVOLUTIONARY HISTORY.—Year Course. 2 s.h. PROFESSOR ALDEN

315. SEMINAR IN SOUTHERN HISTORY.—Year course. 2 s.h. PROFESSOR WOODY

317. SEMINAR IN RECENT EUROPEAN HISTORY.—Year course. 2 s.h. PROFESSOR CARROLL

321. SEMINAR IN THE HISTORY OF SPAIN, HISPANIC AMERICA, AND INTER-AMERICAN RELATIONS.—Year course. 2 s.h. PROFESSOR LANNING

343. SEMINAR IN THE HISTORY OF AMERICAN FOREIGN RELATIONS AND THE FAR EAST.—Particular attention is given to a critical examination of the bibliography of the field. Year course. 2 s.h. PROFESSOR CLYDE

401. SEMINAR ON THE BRITISH COMMONWEALTH.—3 s.h. PROFESSORS COLE, HAMILTON AND SPENGLER

HISTORIOGRAPHY AND THE TEACHING OF HISTORY

FOR GRADUATES

312. SEMINAR IN THE TEACHING OF HISTORY IN COLLEGE.—The work in this course is intended to acquaint students with the problems involved in teaching history in college. It includes critical observation of the teaching by members of the History Staff in Duke University. Year course. 2 s.h. PROFESSORS MANCHESTER AND HAMILTON

This course is required of all candidates for the degree of Doctor of Philosophy who are in residence as many as two years at Duke University unless excused therefrom by the Department.

320. HISTORIOGRAPHY.—A critical study of the process of finding, appraising, and interpreting the sources of history and of the presentation of the results in narrative. Works of important historians from Herodotus to the present are analyzed. The student undertakes specific exercises in research, criticism, and narration. There is consideration of such general topics as schools, theories, philosophies, and the function of history. Year course. 4 s.h. ASSOCIATE PROFESSOR NELSON

This course is required of all candidates for the degree of Doctor of Philosophy who are in residence as many as two years at Duke University unless excused therefrom by the Department.

MATHEMATICS

PROFESSOR GERGEN, CHAIRMAN—134 PHYSICS BUILDING; PROFESSOR ROBERTS, DIRECTOR OF GRADUATE STUDIES—230 PHYSICS BUILDING; PROFESSORS CARLITZ, DRESSEL, ELLIOTT, AND THOMAS; VISITING ASSOCIATE PROFESSOR CAMPBELL; ASSISTANT PROFESSORS GALLIE AND SHOENFIELD; DR. WARNER

Graduate work in the Department of Mathematics is offered leading to the A.M. and Ph.D. degrees. The student, in his undergraduate work, must have had courses in differential and integral calculus, and at least 6 semester hours of other courses in mathematics on the junior or senior level.

The A.M. degree with a major in mathematics is awarded primarily on the basis of scholarship. Of the 24 semester hours of course work required for this degree, 18 semester hours must be taken in the Department of Mathematics.

The Ph.D. degree in mathematics is awarded upon the demonstration of ability and training in research. The original dissertation, therefore, becomes the most important of the formal requirements for this degree.

Because of the important literature of mathematics written in German and French, the student must have a practical reading knowledge of these languages near the beginning of his graduate study.

For 1957-58 the courses planned are 221, 235-236, 271-272, 285, 286, 291-292, 333-334, 375-376, 395-396.

FOR SENIORS AND GRADUATES

221. NUMERICAL ANALYSIS.—The electronic computer, the art of calculation, and the analysis of error. The transition from physical reality to physical abstraction, to mathematical abstraction, to numerical abstraction, to a numerical computing program. Numerical function theory, theory of approximation, approximate solution of equations, and numerical calculus. Prerequisite: calculus. 3 s.h. ASSISTANT PROFESSOR GALLIE

227-228. THEORY OF NUMBERS.—Congruences, arithmetic functions, compound moduli, quadratic reciprocity, Gauss sums, quadratic forms, sums of squares. Prerequisite: calculus. 6 s.h. PROFESSOR CARLITZ

229-230. ALGEBRAIC NUMBERS.—Ideals, unique factorization, divisors of the discriminant, determination of the class number. Prerequisite: theory of equations. 6 s.h. PROFESSOR CARLITZ

235-236. ABSTRACT ALGEBRA.—Groups, fields, rings, matrices, quadratic and bilinear forms, general Galois theory, hypercomplex systems. Prerequisite: calculus. 6 s.h. PROFESSOR CARLITZ

242-248. ARITHMETIC OF POLYNOMIALS.—Field theory, detailed study of finite fields, special polynomials and functions, valuation theory, the zeta function. Prerequisite: Mathematics 235 or consent of the instructor. 6 s.h. PROFESSOR CARLITZ

253-254. DIFFERENTIAL GEOMETRY.—Curves and surfaces in three-dimensional Euclidean space, applicability, differential parameters, Riemannian geometry of n -space. Prerequisite: calculus. 6 s.h. PROFESSOR THOMAS

255-256. PROJECTIVE GEOMETRY.—Postulational, synthetic treatment centering around Desargues' theorem and the principle of projectivity. Conics, coordinates, order, continuity, metric properties. Prerequisite: calculus. 6 s.h. PROFESSOR THOMAS

261-262. MATHEMATICAL ANALYSIS FOR SOCIAL SCIENTISTS.—A development of basic concepts in mathematics, designed for advanced students in psychology, economics and other social sciences, having as the objective for the student the understanding of the mathematical method and the acquisition of technical efficiency. Particular topics considered include mathematical systems, set theory, matrices, vectors, elements of the calculus, difference equations. Prerequisite: one year of college mathematics. 6 s.h. PROFESSOR GERGEN

271-272. INTRODUCTORY TOPOLOGY.—Topological properties of Euclidean spaces, set-theoretic and combinatorial methods. Prerequisite: calculus. 6 s.h. ASSOCIATE PROFESSOR SHOENFIELD

285. MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.—Vectors, line and surface integrals, tensors, complex variables, differential and integral equations. Prerequisite: Mathematics 53. 3 s.h. PROFESSOR DRESSLE

286. MATHEMATICAL ANALYSIS FOR CHEMISTS AND PHYSICISTS.—Wave equation, Fourier series, heat equations, telegraphic equation, Legendre polynomials, Bessel functions, Schrödinger's equation. Prerequisite: Mathematics 53. 3 s.h. PROFESSOR DRESSLE

291-292. THEORY OF FUNCTIONS.—Limits, implicit functions, power series, double series, Cauchy's theorem and its applications, residues, Riemann surfaces, conformal mapping. Prerequisite: calculus. 6 s.h. PROFESSOR GERGEN

FOR GRADUATES

325-326. REAL VARIABLE.—Number system, Lebesgue and Stieltjes integrals, topics in Fourier series. Prerequisite: Mathematics 291-292. 6 s.h. PROFESSOR GERGEN

333-334. ANALYTIC THEORY OF NUMBERS.—Distribution of primes, primes in an arithmetic progression, Waring and Goldbach problems, applications of elliptic functions. Prerequisite: Mathematics 291-292. 6 s.h. PROFESSOR CARLITZ

337-338. EXISTENCE THEOREMS.—Systems of partial differential equations, Pfaffian systems, theorems of Cauchy, Riquier, and Cartan, singular integral varieties. Prerequisite: Mathematics 291-292. 6 s.h. PROFESSOR THOMAS

343-344. ORDINARY DIFFERENTIAL EQUATIONS.—Solution by separation of variables, exact differentials, integrating factors, solution in series. Cauchy's existence theorem, linear differential systems, singular points, partial differential equations equivalent to ordinary systems. Prerequisite: Mathematics 291-292. 6 s.h. PROFESSOR THOMAS

371-372. DIMENSION THEORY.—Abstract spaces, separation theory for Euclidean spaces, dimension theory. Prerequisite: Mathematics 271-272. 6 s.h. PROFESSOR ROBERTS

375-376. SEMINAR IN TOPOLOGY.—Open to students who have completed Mathematics 272 or its equivalent. 6 s.h. PROFESSOR ROBERTS

395-396. TOPOLOGICAL ALGEBRA.—Banach, Hilbert, and locally convex spaces: theorems of Banach, Hahn-Banach, Banach-Steinhaus, Krein-Milman, Mackey; introduction to L. Schwartz's theory of distributions. Banach algebras: the Gelfand theory, Silov's ideal theory, introduction to harmonic analysis on groups with applications to Fourier analysis; operator algebras. Prerequisite: Mathematics 236 and 292, or consent of the instructor. 6 s.h. DR. WARNER

MECHANICAL ENGINEERING

PROFESSOR MACDUFF, CHAIRMAN; PROFESSORS KENYON AND REED;
AND ASSISTANT PROFESSOR ELSEVIER

The Mechanical Engineering Department offers graduate work leading to the degree of Master of Science. It is intended that the work for this degree provide a broad basic foundation in the art of applying science to Mechanical Engineering design and analysis. The major requirement of 12 semester hours in Mechanical Engineering is normally met by taking courses ME 201 and ME 202, plus two other courses which are so selected as to provide background for the specialized thesis-research. The minor requirements of 12 semester hours outside the College of Engineering is normally met by Mathematics 285, 286, and Physics 213, 214.

A minimum prerequisite to the graduate courses in mechanical engineering is a basic knowledge of differential equations, undergraduate thermodynamic theory, kinematics, mechanics, and machine design.

ME 201. THEORETICAL AND APPLIED MECHANICS.—Introduction to the theory of elasticity, vibrations analysis, and hydrodynamics. This course is the same as CE 201. 3 s.h.
PROFESSORS MACDUFF AND ROWE

ME 202. THEORETICAL THERMODYNAMICS.—Classical and current concepts of the conversion of heat and work. Partial differential equations and the combined First and Second Law. Thermo-electricity; super-critical pressure systems; reheat and regenerative processes; binary-vapor systems; introduction to unsteady systems. 3 s.h.
PROFESSOR KENYON AND ASSISTANT PROFESSOR ELSEVIER

ME 221. ANALYSIS OF HEAT AND FLUID FLOW.—Flow of compressible and incompressible fluids; transfer of heat by conduction, convection, and radiation; mathematical methods; partial differential equations; Mach Number concept for sonic and subsonic flow; boundary layer phenomena for viscous fluids. 3 s.h.
PROFESSOR KENYON

ME 231-232. SYSTEMS ENGINEERING.—Methods of obtaining parameters for strength, response, and stability studies of mechanical systems. Impedance and operational means of analysis; mechanical and electronic analogs; nonlinear theories. 6 s.h.
PROFESSOR MACDUFF

ME 250. REFRIGERATION CYCLE ANALYSIS.—Refrigeration cycle elements; theory of reciprocating, axial, and rotary compressors; condensers; evaporators; heat exchangers; cooling towers; characteristics of refrigerants; single and multi-stage cycle analysis; absorption systems; heat pump theory. 3 s.h.
PROFESSOR REED

ME 280. NUCLEAR REACTOR POWER CYCLES.—Introduction to basic reactor principles and reactor types. Consideration of thermodynamic cycles for nuclear reactors for stationary and mobile plants. Analysis of fluid flow and heat transfer problems unique to reactors with development of methods of reactor safety techniques. Metallurgical problems peculiar to reactor design. 3 s.h.
PROFESSOR KENYON

ME 297-298. THESIS RESEACH.—A student with proper background may carry on research under the direction of staff members in one of the following fields. Thesis credit only. 6 s.h.

(a) Systems Engineering: PROFESSOR MACDUFF

(b) Thermodynamics, Heat Transfer and Fluid Flow:

PROFESSORS KENYON AND REED; ASSISTANT PROFESSOR ELSEVIER

PHILOSOPHY

PROFESSOR BAYLIS, CHAIRMAN—212-D WEST DUKE BUILDING; ASSISTANT PROFESSOR BERNARD PEACH, DIRECTOR OF GRADUATE STUDIES—212-B WEST DUKE BUILDING; PROFESSORS NEGLEY AND PATTERSON; ASSISTANT PROFESSORS BUCK, CLARK AND WELSH;
VISITING ASSISTANT PROFESSOR CASTANEDA

The Department of Philosophy offers graduate work leading to the A.M. and Ph.D. degrees. Students may specialize in any of the following fields; The History

of Philosophy; Logic; Philosophy of Science; Epistemology; Metaphysics; Philosophical Analysis; Ethics; Aesthetics; Political Philosophy; Philosophy of Religion; and Philosophy of Law.

Individual programs of study are developed to meet each student's needs. The following requirements, however, are fundamental: (1) in February of their first year new graduate students in philosophy who are not then taking the Preliminary Examinations for the Ph.D. are required to take Qualifying Examinations in the history of philosophy, ancient and modern, and in logic, both classical and symbolic. A student's achievement on these examinations will be regarded as indicative of his ability to undertake advanced graduate work. (2) Preliminary Examinations for the Ph.D., which may be taken only after a student has met the language requirements for that degree, should be passed during the first year of study beyond the A.M. degree. In these examinations students are expected to combine historical knowledge with critical understanding.

The Preliminary Examinations will ordinarily be given during the spring, usually in late February. They consist of:

- 1) Four three-hour written examinations in Philosophy as follows:
 - a) The History of Philosophy, ancient, medieval, modern, and contemporary
 - b) and c) Two of the following:
 - i) Epistemology and Metaphysics
 - ii) Axiology
 - iii) Logic and/or Scientific Method
 - d) The philosophical views of one outstanding philosopher, to be selected by the student with the approval of the Director of Graduate Studies. (He should not be the same philosopher as the one whose works are central to the student's Ph.D. thesis.)
- 2) An examination in the minor field, as set by the committee member from that field.
- 3) At the discretion of the Department, a supplementary oral examination in selected areas.

Upon passing these examinations, and not until then, a student is accepted as a candidate for the Ph.D. degree.

Work in a minor field outside of the Department, but not necessarily confined to any one department, must include six hours for the A.M. and nine for the Ph.D. and may include more as a student's program requires or permits.

For 1957-58 the courses planned are as follows: 202, 203, 210, 217, 219, 220, 223, 224, 227, 232, 291, 292.

FOR SENIORS AND GRADUATES

202. PHILOSOPHY OF ART.—A study of some fundamental issues in aesthetics, with particular reference to the fields of literature, music, and painting. Problems discussed include: the nature and purposes of the arts; meaning in the arts; art and morality; the role of standards in art criticism; aesthetic judgment; interpretation and evaluation. 3 s.h. (E) ASSISTANT PROFESSOR WELSH

203. CONTEMPORARY ETHICAL THEORIES.—Critical discussion and evaluation of the ethical views of twentieth century British and American philosophers. 3 s.h. (E) PROFESSOR BAYLIS

205. PHILOSOPHY OF HISTORY.—Discussion of the method, metaphysical implications, and influence of interpretations of history: Hegel, Marx, Spengler, Toynbee. 3 s.h. (w) PROFESSOR NEGLEY

208. POLITICAL PHILOSOPHY.—Analysis of the structure of social organization with particular reference to the nature of political and legal institutions. 3 s.h. (w) PROFESSOR NEGLEY

210. PHILOSOPHY OF RELIGION.—A critical and constructive study of the nature of religion, of its various forms and manifestations, and of its functions in human life. 3 s.h. (E) PROFESSOR PATTERSON

211. PLATO.—An examination of Plato's views with respect to knowledge, reality, and the state. 3 s.h. (E) PROFESSOR PATTERSON

217. ARISTOTLE.—An analysis of Aristotle's views with respect to knowledge, reality, and the state. 3 s.h. (E) PROFESSOR PATTERSON

218. MEDIEVAL PHILOSOPHY.—A study of the philosophy of the Middle Ages with special attention to selected texts from the works of Christian, Jewish and Arabian philosophers. 3 s.h. (E) PROFESSOR PATTERSON

219. KANT.—Reading and discussion of his philosophy, with some attention to historical continuity. 3 s.h. (w) PROFESSOR NEGLEY

220. THE POST-KANTIANS.—The development from Kant through Fichte and Schelling to Hegel; emphasis on the Hegelian dialectic and its influence on political and legal philosophy. 3 s.h. (w) PROFESSOR NEGLEY

222. REASON AND COMMON SENSE IN 17TH AND 18TH CENTURY BRITISH THOUGHT.—Studies in the theories of reason and sentiment following Hobbes, and the development of opposition among rational, common sense and empirical theories of knowledge and conduct. Readings in Cumberland, Shaftesbury, Hutcheson, Reid and others. 3 s.h. (E) ASSISTANT PROFESSOR PEACH

223. CONTEMPORARY PHILOSOPHY: IDEALISM.—Examination and analysis of the idealist position in recent and contemporary philosophy, with special attention to the works of F. H. Bradley and the British Idealists. 3 s.h. (w) PROFESSOR PATTERSON

224. CONTEMPORARY PHILOSOPHY: REALISM.—A critical analysis, comparison and evaluation of the several varieties of recent realistic theories, presentative and representative. 3 s.h. (E) PROFESSOR BAYLIS

225. BRITISH EMPIRICISM.—A critical study of the writings of Locke, Berkeley, and Hume, with special emphasis on problems in the theory of knowledge. 3 s.h. (E) ASSISTANT PROFESSOR PEACH

227. CONTINENTAL RATIONALISM.—A critical study of the writings of Descartes, Spinoza, and Leibnitz, with special emphasis on problems in the theory of knowledge and metaphysics. 3 s.h. (E) ASSISTANT PROFESSOR PEACH

228. RECENT AND CONTEMPORARY PHILOSOPHY.—A critical study of outstanding philosophical views from Schopenhauer to the present. 3 s.h. (E) ASSISTANT PROFESSOR PEACH

229. AMERICAN PRAGMATISM.—Studies in the philosophy of Peirce, James, Dewey and Mead. 3 s.h. (E) ASSISTANT PROFESSOR WELSH

232. SPECIAL PROBLEMS IN THE PHILOSOPHY OF SCIENCE.—Selected topics concerning the methods of the sciences and the philosophy of science. 3 s.h. (E) ASSISTANT PROFESSOR CLARK

236. ORIENTAL PHILOSOPHY.—A study of the genesis of philosophical ideas in the Upanishads and the Bhagavadgita, and of the developments of the orthodox systems and of the philosophies of the Jains and the Buddhists. 3 s.h. (E) PROFESSOR PATTERSON

250. PHILOSOPHICAL ANALYSIS.—A critical study of recent and contemporary essays in philosophical analysis, and an evaluation of the nature, methods, and results of this movement. 3 s.h. (E) PROFESSOR BAYLIS AND ASSISTANT PROFESSOR BUCK

252. METAPHYSICS.—A critical and evaluative study of rival metaphysical theories and their bases. Analysis of the fundamental metaphysical categories and of metaphysical methods. 3 s.h. (E) PROFESSOR BAYLIS

291, 292. CRITICAL PHILOSOPHY.—The analysis of basic philosophical concepts and beliefs with a view to critical evaluation and constructive emendation of them. Emphasis on the practice as well as the principles of philosophical criticism

and problem solving. 3 s.h. each. Enrollment only by permission of the Department. 291 is ordinarily prerequisite for 292. (E)

PROFESSOR BAYLISS AND MEMBERS OF
THE GRADUATE STAFF

FOR GRADUATES

331, 332.—Seminars in Special Fields of Philosophy. 3 s.h. (E)

Offered as occasion arises.

ALL MEMBERS OF THE GRADUATE STAFF

- (a) Logic
- (b) Ethics
- (c) Aesthetics
- (d) Philosophy of Religion
- (e) History of Philosophy

- (aa) Philosophy of Science
- (bb) Political Philosophy
- (cc) Epistemology
- (dd) Metaphysics
- (ee) History of Philosophy

351, 352. SEMINAR IN THE TEACHING OF PHILOSOPHY.—Required of all candidates for the Ph.D. degree in Philosophy. Discussion of the problems of teaching philosophy at the undergraduate level. Practice teaching in occasional undergraduate sections. 1 s.h. (E)

ALL MEMBERS OF THE GRADUATE STAFF

PHYSICS

PROFESSOR NIELSEN, CHAIRMAN—119 PHYSICS BUILDING; ASSOCIATE PROFESSOR GREULING, DIRECTOR OF GRADUATE STUDIES—209 PHYSICS BUILDING; PROFESSORS GORDY, NEWSON, AND SPONER; ASSOCIATE PROFESSORS FAIRBANK AND LEWIS; ASSISTANT PROFESSORS BLOCK AND WILLIAMSON; VISITING ASSISTANT PROFESSORS BUCKINGHAM AND DUNCAN

The Department of Physics offers graduate work leading to the A.M. and Ph.D. degrees. Course work is designed to give a broad basic foundation in classical and modern physics. All graduate students will be expected to acquire a thorough knowledge of the various branches of classical physics and some familiarity with modern physics and with basic laboratory skills. They will be required to take such course work in the 200 number courses as may be necessary to obtain this foundation.

The student will be required to take such course work as will best be adapted to the kind of work he will subsequently specialize in and to the kind of research he will undertake. The choice of minor will be similarly determined.

Since a practical reading knowledge of French and German is highly desirable for the student of physics, he should satisfy these language requirements as early as possible.

For 1957-58 the courses planned are 201-202, 213-214, 217-218, 219-220, 303, 306, 315-316, 318-319, 324, 331, 351-352.

FOR SENIORS AND GRADUATES

201-202. MECHANICS.—The fundamental principles of Newtonian mechanics; general dynamics of systems of particles, and rigid bodies; the methods of Lagrange and Hamilton; generalized mechanics. Prerequisite: Physics 125. 6 s.h.

ASSISTANT PROFESSOR BLOCK

213-214. CONTEMPORARY PHYSICS.—A course which covers the fundamental concepts and the experimental basis of modern physics. Three lectures each week. 6 s.h.

ASSOCIATE PROFESSOR LEWIS

217-218. ADVANCED PHYSICS LABORATORY.—Measurements involving the fields of mechanics, electricity, magnetism, heat, sound, optics and modern physics. 2-6 s.h.

ALL MEMBERS OF THE GRADUATE STAFF

219. ELECTRICITY AND MAGNETISM.—Fundamentals of electricity and magnetism. Direct and alternating current circuits and networks, physical optics, electromagnetic waves. 3 s.h.

ASSOCIATE PROFESSOR LEWIS

220. ELECTRON TUBE CIRCUITS.—Linear circuit analysis, rectifiers, filters, linear amplifiers, feedback, noise, power amplifiers, oscillators, modulation, relaxation oscillators. 3 or 4 s.h.

ASSOCIATE PROFESSOR LEWIS AND
ASSISTANT PROFESSOR WILLIAMSON

FOR GRADUATES

303-304. THERMODYNAMICS AND STATISTICAL MECHANICS.—Fundamental laws of thermodynamics and statistical mechanics with applications to physics and chemistry. Gas laws; transport phenomena; elements of quantum statistics. 6 s.h.

ASSOCIATE PROFESSOR FAIRBANK AND VISITING
ASSISTANT PROFESSOR BUCKINGHAM

306. LOW TEMPERATURE PHYSICS.—A study of the properties of matter near the absolute zero of temperature; superconductivity, liquid helium, adiabatic demagnetization. Prerequisite: Physics 303. 3 s.h.

ASSOCIATE PROFESSOR FAIRBANK

315-316. PRINCIPLES OF QUANTUM THEORY.—Original and fundamental concepts of quantum theory; wave and matrix mechanics; theory of measurements; exclusion principle and electronic spin. Prerequisite: Physics 201-202. 6 s.h.

ASSOCIATE PROFESSOR GREULING AND VISITING
ASSISTANT PROFESSOR DUNCAN

318-319. ELECTROMAGNETIC FIELD THEORY.—Electrostatics and potential theory; dielectric and magnetic media; the magnetic field of currents and the law of induction. Maxwell's electrodynamics; theory of wave optics; refraction; interference, and diffraction. Crystal optics. Prerequisite: Physics 219. 6 s.h.

ASSOCIATE PROFESSOR GREULING

320. THEORY OF ELECTRONS.—Lorentz' equations of electrodynamics. Classical theories of dispersion, magnetism, and conductivity. Theory of relativity. Prerequisite: Physics 318-319. 3 s.h.

ASSOCIATE PROFESSOR GREULING

323. THEORY OF ATOMIC SPECTRA.—Excitation of spectra, computation of wave lengths from photographs of spectra, study of the structure of atomic spectra with applications. 3 s.h.

PROFESSOR SPONER

324. THEORY OF MOLECULAR SPECTRA.—A study of the structure of molecular spectra with applications. 3 s.h.

PROFESSOR SPONER

331. MICROWAVE RADIATION.—Microwave generators, cavity resonators, transmission lines, radiation propagation and detection. 3 s.h.

PROFESSOR GORDY

335. MICROWAVE SPECTROSCOPY.—Application of microwaves in the determination of molecular, atomic and nuclear properties. Stark and Zeeman effects in microwave spectroscopy. Magnetic resonance absorption. 3 s.h.

PROFESSOR GORDY

340. STRUCTURE OF MATTER.—Selected topics dealing with the constitution of matter, such as crystal structure and x-rays, the solid state and problems of molecular structure. 3 s.h.

PROFESSOR SPONER AND VISITING
ASSISTANT PROFESSOR BUCKINGHAM

341. ADVANCED TOPICS IN QUANTUM THEORY.—Quantum theory of radiation and collisions with special reference to nuclear and high energy physics. Prerequisite: Physics 315-316. 3 s.h.

VISITING ASSISTANT PROFESSOR DUNCAN

343. NUCLEAR PHYSICS.—Elementary theory of the deuteron; low energy neutron proton scattering; theory of nuclear reactions; penetration of potential barriers; nuclear energy levels. Prerequisite: Physics 315. 3 s.h.

PROFESSOR NEWSON

344. ADVANCED NUCLEAR PHYSICS.—The deuteron, nuclear forces, scattering of elementary particles, beta-radiation. Other aspects of nuclear physics susceptible of theoretical interpretation. Prerequisite: Physics 343. 3 s.h.

351-352. SEMINAR.—A series of weekly discussions on topics related to the research projects under investigation in the Department. 2 s.h.

ALL MEMBERS OF THE GRADUATE STAFF

POLITICAL SCIENCE

PROFESSOR RANKIN, CHAIRMAN—308 LIBRARY; PROFESSOR WILSON, DIRECTOR OF GRADUATE STUDIES—405 NEW TOWER, LIBRARY; PROFESSORS COLE, CONNERY AND HALLOWELL;
ASSOCIATE PROFESSOR BRAIBANTI

The Department of Political Science offers graduate work leading to the A.M. and Ph.D. degrees. Instruction is designed to prepare the student for teaching, for government service, and for other work related to public affairs. Before undertaking graduate study in political science, a student is ordinarily expected to have completed at least 12 semester hours of course work in political science, including some work in American government.

Fields of political science in which instruction is at present offered for candidates for the degree of Doctor of Philosophy are the following: American Government and Constitutional Law; Comparative Government; Political Theory; American State and Local Government; International Law; Public Administration. Candidates for the degree of Doctor of Philosophy who propose to major in political science must elect five fields, including Comparative Government and Political Theory; at least one of the five fields must be taken in a department other than the Department of Political Science.

In 1957-58 the courses planned are 207, 209, 211, 212, 221, 223, 224, 225, 226, 227-228, 229, 230, 231, 235, 241, 246, 291, 310, 311, 321, 325, 328, 341, and 401.

FOR SENIORS AND GRADUATES

207. AMERICAN CONSTITUTIONAL LAW AND THEORY.—A study of leading principles of American government, as developed through judicial interpretation of the Constitution. 3 s.h. PROFESSOR RANKIN

209. PROBLEMS IN STATE AND LOCAL GOVERNMENT IN THE UNITED STATES.—A study of the historical development of state and local governments, their present organization and subdivisions, and their relation to each other. Special attention is given to the position of the states in the federal union through the study of federal-state, inter-state, and state-local relation. 3 s.h. PROFESSOR RANKIN

211. POLITICAL INSTITUTIONS OF THE FAR EAST.—An analysis of the ideas underlying the development of government in Japan, China, and Korea. Study of the writings of Lao-tse, Confucius and the sacred books of Buddhism and Shinto. Particular attention is given to the theory of Confucian bureaucracy, the Taikwa Reform, the development of the Tokugawa administrative state, the constitutional reforms of Sun Yat-sen in China and of the Meiji Era in Japan. 3 s.h.

ASSOCIATE PROFESSOR BRAIBANTI

212. INTERNATIONAL POLITICS OF THE FAR EAST.—An analysis of the relations of China, Japan, and Korea *inter se* and with outside powers, with emphasis upon changing power relationships within the Asian cultural sphere. 3 s.h.

ASSOCIATE PROFESSOR BRAIBANTI

221. INTERNATIONAL PUBLIC ORGANIZATION.—A study of the structure and functioning of the United Nations organs, of related specialized agencies such as the International Labor Organization, and of regional agencies such as the Organization of American States. 3 s.h.

PROFESSOR WILSON

223. POLITICAL THOUGHT TO THE SEVENTEENTH CENTURY.—A survey from the time of Plato to the close of the seventeenth century; Græco-Roman, Patristic and Germanic thought; individualism and cosmopolitanism; effect of the Church-State controversy and the conciliar movement; medieval constitutionalism; legislative sovereignty. 3 s.h.

PROFESSORS HALLOWELL AND WILSON

224. MODERN POLITICAL THEORY.—An historical survey and philosophical analysis of political theory from the beginning of the seventeenth to the middle of the nineteenth century. Attention is given to the rise of liberalism, the Age of Enlightenment, the romantic and conservative reaction, idealism and utilitarianism. 3 s.h.

PROFESSOR HALLOWELL

225. COMPARATIVE GOVERNMENT.—A comparative study of modern political institutions and processes, with particular attention to European constitutional government and politics. 3 s.h. PROFESSOR COLE

226. COMPARATIVE GOVERNMENT.—A comparative study of modern political institutions and processes, with particular attention to European totalitarian and authoritarian political systems. 3 s.h. PROFESSOR COLE

227-228. INTERNATIONAL LAW.—Elements of international law, particularly as interpreted and applied by the United States; rights and duties of states with respect to recognition, state territory and jurisdiction, nationality, diplomatic and consular relations, treaties, treatment of aliens, pacific settlement of disputes, international regulation of the use of force, and collective security. 6 s.h.

PROFESSOR WILSON

229. RECENT AND CONTEMPORARY POLITICAL THEORY.—The rise of positivism and its impact upon modern political thought, the origins of socialism, Marxism and its variants, socialism in the Soviet Union, nationalism, Fascism and National Socialism, the crisis in modern democracy, Christianity and the social order. 3 s.h. PROFESSOR HALLOWELL

230. AMERICAN POLITICAL INSTITUTIONS.—A study of the formation and development of institutions of the national government in the United States, with historical and analytical treatment. Among other topics this course is concerned with the Constitutional Convention of 1787, and the development of Congress, the Presidency, and the Supreme Court. 3 s.h. PROFESSOR RANKIN

231. AMERICAN POLITICAL THEORY.—An analysis of the main currents in American political thought from colonial beginnings to the present day, with emphasis upon the development of liberalism in America. 3 s.h.

PROFESSOR HALLOWELL

234. CIVIL-MILITARY RELATIONSHIPS IN AMERICAN GOVERNMENT.—A consideration of the role of the military in American government both in practice and in theory. Special emphasis will be given to formal civil-military structural arrangements for determining policies such as the National Security Council, and to the degree of civilian control within the military establishment. 3 s.h.

PROFESSOR CONNERY

235. THE BRITISH COMMONWEALTH.—An analysis of the political relationships between the members of the Commonwealth and a comparative study of the governments of the Commonwealth countries, with particular reference to Canada. A course designed in part to utilize the occasional services of visiting professors from Commonwealth countries. 3 s.h. PROFESSOR COLE

241. ADMINISTRATIVE MANAGEMENT.—An advanced course in public administration with special attention being given to the development of scientific management, its application to government in the United States and a consideration of current problems in organization, procedures, work simplification, and management improvement. 3 s.h. PROFESSOR CONNERY

242. NATIONAL ADMINISTRATION.—A study of the administrative organization, working concepts and procedures of the United States Government, illustrated through the operations of the Bureau of the Budget. 3 s.h.

PROFESSOR CONNERY

246. GOVERNMENT ADMINISTRATION AND PUBLIC POLICY.—Through use of the laboratory and case study techniques, a consideration of the types of administrative problems that the United States Government encounters in the field of public policy, and their possible solution. 3 s.h. PROFESSOR CONNERY

271. SOCIOPOLITICS AND CAPITALISM.—Labor and labor policies in Western Europe and the United States in the nineteenth and twentieth centuries; the development of monopoly power and political power of labor in recent decades. 3 s.h.

291. PROBLEMS OF MUNICIPAL GOVERNMENT.—An analysis of problems relating to the structural system and activities of municipalities in the United States. 3 s.h. PROFESSOR RANKIN

292. MUNICIPAL ADMINISTRATION.—A study of principles and methods relating to municipal administration in the United States. 3 s.h. PROFESSOR RANKIN

FOR GRADUATES

301-302. DEPARTMENTAL GRADUATE SEMINAR.—An introduction to research methodology, inter-disciplinary relationships and current research problems. Required of all graduate majors in political science. No credit.

PROFESSORS WILSON, RANKIN, COLE, HALLOWELL, CONNERY, BRAIBANTI,
OTHER MEMBERS OF THE FACULTY AND VISITING LECTURERS

310. SEMINAR IN STATE GOVERNMENT.—Open to students who have completed course 209 or its equivalent. 3 s.h. PROFESSOR RANKIN

311. SEMINAR IN FAR EASTERN POLITICS.—Open to students who have completed course 211 or its equivalent. 3 s.h. ASSOCIATE PROFESSOR BRAIBANTI

321. SEMINAR IN POLITICAL THEORY.—Open to students who have completed 6 semester hours in Political Science 223, 224, 229, 231 or their equivalents. 3 s.h. PROFESSOR HALLOWELL

325. SEMINAR IN COMPARATIVE GOVERNMENT.—Open to students who have completed courses 225 and 226 or their equivalents. 3 s.h. PROFESSOR COLE

328. SEMINAR IN INTERNATIONAL LAW.—Open to students who have completed course 227-228 or its equivalent. 3 s.h. PROFESSOR WILSON

341. SEMINAR IN PUBLIC ADMINISTRATION.—Directed reading, discussion and reports concerning the theory and practice of Public Administration. 3 s.h. PROFESSOR CONNERY

401. SEMINAR ON THE BRITISH COMMONWEALTH.—3 s.h.

PROFESSORS COLE, HAMILTON AND SPENGLER

RELATED COURSES IN OTHER DEPARTMENTS

Economics 233, 237-238, 315, 316, 329, 365; History 205-206, 215-216, 217-218, 233, 234, 261-262; Philosophy 208; Religion 224, 394; Sociology 382.

RELATED COURSE WORK IN THE SCHOOL OF LAW

There may be graduate credit for course work completed in the Duke University School of Law, under regulations referred to on page 45 of this *Bulletin*.

PSYCHOLOGY

PROFESSOR RODNICK, CHAIRMAN—102 BIVINS HALL; PROFESSOR ZENER, DIRECTOR OF GRADUATE STUDIES—205 PSYCHOLOGICAL LABORATORY; PROFESSOR RODNICK, DIRECTOR OF CLINICAL TRAINING; PROFESSORS ADAMS, DAI, KOCH, AND KUDER; ASSOCIATE PROFESSORS BANHAM, COHEN, GARMEZY, AND KIMBLE; ASSISTANT PROFESSORS BORSTELMANN, GUTTMAN, JONES, PARSONS, SPIELBERGER, AND WILSON

The Department offers training leading to the A.M. and Ph.D. degrees with specialization in a number of areas. Training for the Ph.D. is offered in general experimental, clinical, counseling, social and industrial psychology. A program of studies leading to the A.M. degree is offered in all areas except clinical and counseling psychology.

Whatever the field of psychology in which a student eventually specializes, he is required to have a thorough background in the facts, methods, and theories of general psychology. Graduate programs are arranged to achieve this common background primarily during the first year, with specialization in course work reserved for subsequent years.

Normally, the candidate for the Ph.D. degree is expected, by the end of his second year, in addition to having worked out a program of studies, to have passed

his language examinations, a departmental qualifying examination in his area of intended doctoral research, and the preliminary examination. By this time also his doctoral dissertation subject should be formulated. Emphasis is laid upon the completion of the dissertation, directed by a member of the staff, demonstrating competence and independence in the investigation of an original and significant problem.

As an integral part of their academic work during the first, second and fourth years, students specializing in clinical or counseling psychology will undertake field work in a variety of clinical settings. In addition, they will normally spend the third year in an appropriate, approved internship. The fourth year will be spent in residence at Duke University to complete the dissertation.

The field of minor work is not restricted, but it may be pointed out that the fields most relevant to graduate study in psychology are philosophy of science, sociology and anthropology, physiology, neuroanatomy, mathematics, and education.

Further details concerning the program of studies in psychology may be obtained from the Director of Graduate Studies in Psychology.

For 1957-58 the courses planned are 201-202, 206, 209, 212, 215, 221-222, 236, 242, 265, 266, 303-304, 305, 306, 308, 309, 310, 312, 320, 322, 335-336, 341, 342, 344-345, 371.

FOR SENIORS AND GRADUATES

201-202. PROSEMINAR.—An integrated core curriculum in general psychology, designed to provide an advanced background in the principles, and the empirical and theoretical methods, of the major fields of psychology. The topics include: scientific methods in psychology, biological foundations of behavior, motivation, learning, perception, behavior development, personality, the social determinants of behavior, and contemporary psychological theories. Required of all first year students. 9 s.h. fall semester, 6 s.h. spring semester.

PROFESSORS ADAMS, KOCH, KUDER, RODNICK, AND ZENER;
ASSOCIATE PROFESSORS BANHAM AND KIMBLE; ASSISTANT
PROFESSORS GUTTMAN, JONES, AND WILSON

206. SOCIAL PSYCHOLOGY.—An examination of selected research and areas in social psychology including social perception, socialization, prejudice, and the behavioral effects of communication, interaction, and influence. 3 s.h.

ASSISTANT PROFESSOR JONES

209. EXPERIMENTAL METHODS IN PSYCHOLOGY.—A study of methods for the identification, control, and recording of essential variables in psychological situations, with emphasis upon the relation of experimental techniques to problem formulation. Laboratory, lectures, and discussions. 3 s.h.

PROFESSOR ZENER AND ALL MEMBERS OF
THE GRADUATE STAFF

212. PHYSIOLOGICAL PSYCHOLOGY.—An advanced study of the interrelationships between psychological and physiological processes. 3 s.h.

ASSISTANT PROFESSOR GUTTMAN

215. DEVELOPMENTAL PSYCHOLOGY.—The environmental forces conditioning the development of personality structure and the mechanisms contributing to psychological growth; critical periods in character formation from infancy to senescence. 3 s.h.

PROFESSOR ADAMS

221-222. PROPRACTICUM.—Lectures, demonstrations and practice in the use of basic procedures, projective and non-projective, employed in clinical psychology; principles of interpretation and reporting of test findings. Laboratory periods will be held in clinical field facilities. 3 s.h. each semester.

ASSOCIATE PROFESSOR GARMEZY AND ALL MEMBERS
OF THE CLINICAL STAFF

236. THEORETICAL PSYCHOLOGY.—This course is devoted to the analysis of techniques of theory construction in psychology. The discussion of these methodological issues is co-ordinated with the analysis of concrete formulations in contemporary psychological theory. 3 s.h.

PROFESSOR KOCH

242. MEASUREMENT OF APTITUDES, INTEREST, AND ACHIEVEMENT (also listed as Education 242).—A study of the theories and principles of psychological measurement as applied to aptitude, interest, and achievement testing. 3 s.h.
PROFESSOR KUDER

265. FUNDAMENTAL STATISTICAL APPLICATIONS IN PSYCHOLOGICAL RESEARCH.—Introduction to probability and the use of statistics in description and hypothesis testing in psychology including the following applications: correlational techniques, chi-square and t tests, distribution-free tests and one-way analysis of variance. Prerequisite: Psychology 117-118 or equivalent. 3 s.h. (Second semester.)
ASSISTANT PROFESSOR WILSON

266. ADVANCED STATISTICAL APPLICATIONS IN PSYCHOLOGICAL RESEARCH.—The basic theory and applications of analysis of variance techniques to complex experimental designs will be covered. Additional advanced techniques, including factor analysis, will be introduced. Prerequisite: Psychology 265 or equivalent. 3 s.h. (First semester.)
ASSISTANT PROFESSOR WILSON

303-304. RESEARCH.—2 or 3 s.h. ALL MEMBERS OF THE GRADUATE STAFF

305. PSYCHOPATHOLOGY.—An examination of behavior disorders, with particular emphasis on explanatory concepts and the evidence from research in this field. 3 s.h.
PROFESSOR RODNICK

306. SEMINAR IN DEVELOPMENTAL PSYCHOLOGY.—2 or 3 s.h.
PROFESSOR ADAMS

308. SEMINAR IN PSYCHOPATHOLOGY AND PERSONALITY THEORY.—3 s.h.
PROFESSOR RODNICK

309. PROBLEMS OF LEARNING.—3 s.h. ASSOCIATE PROFESSOR KIMBLE

310. SEMINAR IN PERCEPTION.—3 s.h. PROFESSOR ZENER

312. SEMINAR IN THEORETICAL PSYCHOLOGY.—3 s.h. PROFESSOR KOCH

320. SEMINAR IN THE THEORY OF MENTAL TESTS.—3 s.h.
PROFESSOR KUDER

322. SEMINAR IN PERSONNEL PSYCHOLOGY.—3 s.h. PROFESSOR KUDER

335-336. CLINICAL PSYCHOLOGY PRACTICUM.—Seminar discussion and supervised field experience in the application of basic psychological procedures and principles to clinical cases in a variety of institutional settings. Prerequisite: Psychology 221-222. 3 s.h. each semester.

ASSOCIATE PROFESSOR COHEN AND ALL MEMBERS
OF THE CLINICAL STAFF

341. SOCIETY, CULTURE AND BEHAVIOR DISORDERS.—A critical survey of current theories of the structure and genesis of psychoneurosis, with particular stress on psychoneurotic disturbances as problems of the self in relation to society and culture. 3 s.h. Second semester.
PROFESSOR DAI

342. PRINCIPLES OF PSYCHOTHERAPY.—With permission of instructor. Prerequisite: Psychology 341. 3 s.h.
PROFESSOR DAI

344-345. ADVANCED SEMINAR IN CLINICAL PSYCHOLOGY. 1 s.h. each semester.
ALL MEMBERS OF THE CLINICAL STAFF

371. PRE-SCHOOL BEHAVIOR PROBLEMS.—3 s.h.
ASSOCIATE PROFESSOR BANHAM

RELATED COURSES IN OTHER DEPARTMENTS

Education 217, 227, 228, 240, 241, 244, 248, 258; Philosophy 103, 104, 203, 208, 224, 225, 228, 232, 241, 250, 331-332; Sociology and Anthropology 93, 94, 212, 213, 214, 238, 243, 246, 271, 276, 330, 380; Zoology, 151, 252, 271, 324, 328, 355-356; Physiology M261-262.

RELIGION

PROFESSOR SMITH, DIRECTOR OF GRADUATE STUDIES—308 DIVINITY SCHOOL; PROFESSORS
BEACH, CLARK, CUSHMAN, PETRY, AND STINESPRING; ASSOCIATE PROFESSORS
BROWNLEE AND LACY; ASSISTANT PROFESSOR SCHAFER

The Department of Religion offers graduate work leading to the A.M. and Ph.D. degrees. Students may major in one of three fields: (1) Biblical Studies; (2) Historical Studies; and (3) Systematic and Contemporary Studies. They will be expected to take such courses in one or both of the other fields as will conduce to an adequate understanding of their chosen fields of specialization.

In addition to course work in these major fields, students will take such other courses in cognate fields as will contribute to the enrichment of their major studies. For those majoring in Biblical Studies, courses in ancient language and literature are suggested; for those majoring in Historical Studies, courses in history are suggested; and for those majoring in Systematic and Contemporary Studies, courses in philosophy, political science, and sociology are suggested.

Students who intend to become candidates for the Ph.D. degree should take the required language examinations in both French and German not later than the beginning of the second year of residence.

For 1957-58 the courses planned are 201-202, 207-208, 301, 305, 310, 311, 316, 317, 318, 323, 324, 325, 326, 328, 331, 334, 370, 387, 391, 392, 393, 394, 395.

FIELD I. BIBLICAL STUDIES

201-202. FIRST HEBREW.—The principles and structure of the Hebrew language with translation of selected Old Testament narratives. 6 s.h.

PROFESSOR STINESPRING

207-208. SECOND HEBREW.—II Samuel the first semester and the Qumran Isaiah Scroll the second. 6 s.h.

ASSOCIATE PROFESSOR BROWNLEE

217. THE NEW TESTAMENT IN GREEK.—Extensive reading of the Greek text of the New Testament, with special emphasis upon its interpretation. 3 s.h.

PROFESSOR CLARK

218. GALATIANS AND I CORINTHIANS.—A detailed study of two of Paul's major epistles, based on the Greek text. 3 s.h.

PROFESSOR CLARK

220. I PETER AND THE GOSPEL OF JOHN.—A detailed study of two of the non-Pauline writings of the New Testament. The course will be based on the Greek text. 3 s.h.

301. THE RELIGIOUS THOUGHT OF POST-EXILIC JUDAISM.—A study of the development of religious ideas in Post-Exilic Judaism. 3 s.h.

ASSOCIATE PROFESSOR BROWNLEE

304. ARAMAIC.—A study of the Aramaic portions of the Old Testament, and selected passages from the Targums, Midrashes, and Talmuds. Hours to be arranged. 3 s.h.

PROFESSORS STINESPRING AND BROWNLEE

305. THIRD HEBREW.—A study of late Hebrew prose, with readings from Chronicles, Ecclesiastes, and the Mishnah. Hours to be arranged. 3 s.h.

PROFESSOR STINESPRING

306. ADVANCED HEBREW.—A course on the Dead Sea Scrolls. 3 s.h.

ASSOCIATE PROFESSOR BROWNLEE

307. SYRIAC.—A study of the script and grammar, with readings from the Syriac New Testament and other early Christian documents. Some knowledge of Hebrew and Aramaic prerequisite. 3 s.h.

PROFESSOR STINESPRING

309. HISTORY OF THE ANCIENT NEAR EAST.—A specialized study of the civilizations of Egypt, Palestine, Syria, and Mesopotamia in the light of Biblical archaeology. 3 s.h.

PROFESSOR STINESPRING

310. OLD TESTAMENT PROPHECY.—The prophetic movement in Israel with special emphasis on the prophets of the eighth century B.C. 3 s.h.

PROFESSOR STINESPRING

311. THE LIFE AND TEACHINGS OF JESUS.—A study of the events and sayings of the historical Jesus, in the light of His mission. 3 s.h. PROFESSOR CLARK

312. ADVANCED NEW TESTAMENT THEOLOGY.—An examination of the central aspects of New Testament theology. 3 s.h.

313. THE APOSTOLIC FATHERS.—A study of the Christian development from Clement of Rome to Polycarp (90-155 A.D.), with readings in the Greek text. 3 s.h. PROFESSOR CLARK

314. PATRISTIC THOUGHT.—A study of the development of early Christian doctrine to the period of Irenaeus. 3 s.h.

316. HELLENISTIC RELIGIONS.—A study of the Gentile religions in the Roman Empire, at the beginning of the Christian era. 3 s.h. PROFESSOR CLARK

317. THE SYNOPTIC GOSPELS.—A detailed study of their characteristics and contents, based upon the Greek text, with attention to their respective sources and to the development of synoptic criticism. 3 s.h. PROFESSOR CLARK

318. TEXTUAL CRITICISM OF THE NEW TESTAMENT.—A study of the scientific recovery of the Greek text on which modern versions are based; manuscript discoveries; principles of textual criticism; practice in collating original manuscripts in the Duke collection. 3 s.h. PROFESSOR CLARK

319. JUDAISM AND EARLY CHRISTIANITY.—A special study of the relation between Judaism and early Christianity. 3 s.h.

RELATED COURSES IN OTHER DEPARTMENTS

Greek 257; Latin 258; Aesthetics, Art, and Music 215, 216.

FIELD II. HISTORICAL STUDIES

224. CONCEPTIONS OF MAN IN WESTERN THOUGHT.—An analysis and interpretation of important types of philosophical and theological theory. 3 s.h. PROFESSOR CUSHMAN

321. PLATONISM AND CHRISTIANITY.—An analysis of Plato's religious philosophy and a survey of its continuing influence in Hellenistic and Christian thought. 3 s.h. PROFESSOR CUSHMAN

322. NINETEENTH CENTURY EUROPEAN THEOLOGY.—Protestant theology from Kant to Herrmann together with representative British theologians. 3 s.h. PROFESSOR CUSHMAN

323. HISTORY OF CHRISTIAN THOUGHT I.—An historical study of theology in the ancient and medieval church. 3 s.h. ASSISTANT PROFESSOR SCHAFER

324. HISTORY OF CHRISTIAN THOUGHT II.—An historical study of theology from the Reformation. 3 s.h. ASSISTANT PROFESSOR SCHAFER

330. THE CHURCH IN EUROPE SINCE 1800.—Emphasis is placed on the relation of the Church to the social, economic, and political life of Modern Europe. 3 s.h. PROFESSOR PETRY

331. THE SOCIAL MESSAGE OF THE EARLY AND MEDIEVAL CHURCH.—A study of the social teachings and contributions of the Christian Church prior to the Protestant Reformation. 3 s.h. PROFESSOR PETRY

332. THE MEDIEVAL CHURCH.—Outstanding characteristics of the Medieval Church, emphasizing theory, polity, institutions, sacraments, and worship. 3 s.h. PROFESSOR PETRY

334. CHURCH REFORMERS AND CHRISTIAN UNITY.—The work of such reformers as Marsilius of Padua, William of Ockham, Jean Gerson, Pierre d'Ailly, and Nicholas of Cusa in relation to ecclesiastical schism and the search for Christian unity through representative councils. 3 s.h. PROFESSOR PETRY

336. CHRISTIAN MYSTICISM IN THE MIDDLE AGES.—Source studies, in historical perspective, of such late medieval mystics as Bernard of Clairvaux, the Victorines, Ramon Lull, Meister Eckhart, Richard Rolle, Catherine of Siena, and Nicholas of Cusa. 3 s.h.
PROFESSOR PETRY

370. SEMINAR: JONATHAN EDWARDS.—A critical analysis of Edwards' major theological works. 2 s.h.
PROFESSOR SMITH

387. CHRISTIAN ETHICS AND SOCIAL PHILOSOPHY.—Selected social philosophies from Locke to Sumner analyzed from the standpoint of Christian ethics. 3 s.h.
ASSOCIATE PROFESSOR LACY

391. HISTORICAL TYPES OF CHRISTIAN ETHICS I.—A critical study of representative statements of Christian ethical theory, through the early Reformation. 3 s.h.
PROFESSOR BEACH

392. HISTORICAL TYPES OF CHRISTIAN ETHICS II.—A continuation of C.E. 391, from the Reformation through current Christian ethical theory. Prerequisite: C.E. 391. 3 s.h.
PROFESSOR BEACH

395. CHRISTIAN THOUGHT IN COLONIAL AMERICA.—Exposition of the main currents in Protestant Theology. 3 s.h.
PROFESSOR SMITH

396. CHRISTIAN THOUGHT IN NINETEENTH-CENTURY AMERICA.—Comparative study of Orthodoxy and Liberalism. 3 s.h.
PROFESSOR SMITH

FIELD III. SYSTEMATIC AND CONTEMPORARY STUDIES

320. SEMINAR: FRIEDRICH SCHLEIERMACHER.—Critical examination of the dogmatic system. 2 s.h.
PROFESSOR CUSHMAN

325. PHILOSOPHICAL THEOLOGY I.—Main problems in the history of philosophical theology. 3 s.h.
PROFESSOR CUSHMAN

326. PHILOSOPHICAL THEOLOGY II.—Prolegomena to the system of Christian Theology. 3 s.h.
PROFESSOR CUSHMAN

328. TWENTIETH-CENTURY EUROPEAN THEOLOGY.—Critical examination of the thought of selected representative theologians. 2 s.h.
PROFESSOR CUSHMAN

372. SEMINAR: THEOLOGY OF PAUL TILLICH.—An examination of Tillich's philosophical theology. 2 s.h.
PROFESSORS SMITH AND SCHAFER

389. CHRISTIAN ETHICS AND CONTEMPORARY CULTURE.—A study of the interaction between Christian thought and current secular social theory. 3 s.h.
PROFESSOR BEACH

390. CURRENT PROBLEMS IN CHRISTIAN ETHICAL THEORY.—A critical study, seminar style, of dominant issues in Christian ethics, through an analysis of a variety of contemporary Christian treatments of such problems as love, justice, community and vocation. 3 s.h.
PROFESSOR BEACH

393. THE CHRISTIAN INTERPRETATION OF HISTORY.—A comparative examination of the chief secular and Christian theories of history current in Western thought. 3 s.h.
PROFESSOR BEACH

394. CHRISTIANITY AND THE STATE.—The relation of the Christian theory of the State to political problems, with special consideration of the religious assumptions underlying democratic theory and practice and of the relationship of church to state. 3 s.h.
PROFESSOR BEACH

397. CONTEMPORARY AMERICAN THEOLOGY.—Critical appraisal of major tendencies. 3 s.h.
PROFESSOR SMITH

ROMANCE LANGUAGES

PROFESSOR JORDAN, CHAIRMAN—214 CARR; PROFESSOR WALTON, DIRECTOR OF GRADUATE STUDIES—207 GRAY; PROFESSORS DAVIS AND PREDMORE; ASSOCIATE PROFESSORS CASTELLANO AND DOW AND FEIN; ASSISTANT PROFESSOR VINCENT

The Department of Romance Languages offers graduate work leading to the A.M. and Ph.D. degrees. In order to undertake graduate study in this Department, the student should normally have credit for four years of college courses in the chosen language, or 18 semester hours beyond the conventional two units offered at entrance to college. In addition to this minimum requirement, the student should have had one semester of review in composition and grammar.

It is recommended that candidates for the A.M. degree take a second Romance Language as the minor subject.

A candidate for the Ph.D. degree should be equipped to follow graduate courses in a second Romance Language. For this degree some training in Romance Linguistics will be required, the amount to be determined by the Department upon consideration of the student's preparation in the field.

Graduate students in this Department will be required to maintain oral practice in their major language through non-credit exercises provided by the Department.

The courses planned for 1957-58 are: French 215-216, 219, 220, 227, 238; Spanish 257, 260, 261, 264, 270, 276; and Romance Languages 218.

FRENCH

FOR SENIORS AND GRADUATES

213. FRENCH CLASSICISM.—Its initial phase. Readings from Malherbe, Molière, Racine, Boileau, La Fontaine, La Rochefoucauld, Madame de Sévigné, La Bruyère, and others. 3 s.h. PROFESSOR WALTON

214. FRENCH CLASSICISM.—Its final phase. Readings from Fontenelle, Saint-Simon, Abbé Prévost, Marivaux, Lesage, Montesquieu, Voltaire, and others. The main emphasis is on Voltaire. 3 s.h. PROFESSOR WALTON

215, 216. THE MODERN FRENCH NOVEL.—A survey of the novel form from the seventeenth to the twentieth century, with particular attention to the analysis of fundamental literary trends; classicism, rationalism, romanticism, and realism. 6 s.h. PROFESSOR JORDAN

219, 220. OLD FRENCH LANGUAGE AND LITERATURE.—Reading and discussion of representative texts of the Medieval Period accompanied by a study of the evolution of the language. 6 s.h. ASSISTANT PROFESSOR VINCENT

227. FRENCH POETRY SINCE THÉOPHILE GAUTIER.—Readings from the principal figures of the Parnassian and Symbolist movements, including Baudelaire, Leconte de Lisle, Heredia, Verlaine, Rimbaud, Mallarmé and Régner. 3 s.h. PROFESSOR WALTON

238. ANATOLE FRANCE.—An analysis of the principal phases of his work and its relation to the French tradition. Reading of his poetry, *Le Crime de Sylvestre Bonnard*, *Thais*, *Le Jardin d'Épicure*, *Les Dieux ont Soif*, *Le Lys Rouge*, *L'Île des Pingouins*, parts of *La Vie Littéraire*. 3 s.h. PROFESSOR WALTON

FOR GRADUATES

323, 324. REALISM AND NATURALISM.—Literary doctrines and practices in the generation of 1850-90, with particular reference to the background of scientific thinking. 6 s.h. PROFESSOR JORDAN

325, 326. FRENCH LITERATURE IN THE SIXTEENTH CENTURY.—The main attention is given to Rabelais, Montaigne, Marot, Ronsard, Du Bellay. The principal movements treated are: Humanism, Hellenism, Platonism, Petrarchism, the Pléiade. 6 s.h. PROFESSOR WALTON

333, 334. CONTEMPORARY FRENCH LITERATURE.—The twentieth century is examined mainly with reference to the originality of its contribution in the domain of ideas and literary forms. Only the leading figures are read extensively: Rolland, Gide, Proust, Duhamel, Valéry. 6 s.h. PROFESSOR JORDAN

350. NINETEENTH-CENTURY FRENCH CRITICISM.—A survey of critical doctrines and practices from Sainte-Beuve to the end of the century, including Brunetière, Faguet, Lemaître, France, Doumic and others. 3 s.h. PROFESSOR JORDAN

SPANISH

FOR SENIORS AND GRADUATES

255. MODERN LATIN AMERICAN LITERATURE.—The coming of age of Latin American literature in the nineteenth and twentieth centuries, with particular attention to the Modernist movement. 3 s.h. ASSOCIATE PROFESSOR FEIN

256. CONTEMPORARY LATIN AMERICAN LITERATURE.—Trends in Latin American literature after the Modernist movement. Analysis of significant works in various genres. 3 s.h. ASSOCIATE PROFESSOR FEIN

257. OLD SPANISH LANGUAGE.—The historical development of the language together with illustrative readings. 3 s.h. PROFESSOR DAVIS

258. OLD SPANISH LITERATURE.—The literature of the Middle Ages and Early Renaissance. 3 s.h. PROFESSOR DAVIS

260. ADVANCED COMPOSITION AND SYNTAX.—Study of fundamental difficulties in the language; practice in writing idiomatic Spanish; exercises in free composition. For students who have a satisfactory command of Spanish grammar and fair conversational ability. Prerequisite: Spanish 173-174 or permission. 3 s.h. PROFESSOR CASTELLANO

261. NINETEENTH CENTURY NOVEL.—A study of literary and social trends in the last half of the nineteenth century. Readings will be selected from the novels of Valera, Pereda, Galdós, Pardo Bazán, Blasco Ibáñez, and their contemporaries. 3 s.h. PROFESSOR DAVIS

264. MODERN AND CONTEMPORARY SPANISH THEATER.—A brief review of the modern and contemporary Spanish Theater from the period of Romanticism. Lectures, reading and discussion of the most representative works of Benavente, los hermanos Quintero, García Lora, Casona, etc. 3 s.h. PROFESSOR CASTELLANO

265. GOLDEN AGE LITERATURE: CERVANTES.—The life and thought of Cervantes with special emphasis on his *Quixote*. 3 s.h. PROFESSOR PREDMORE

266. GOLDEN AGE LITERATURE: THE DRAMA.—Study of the chief Spanish dramatists of the seventeenth century with readings of representative plays of this period. 3 s.h. PROFESSOR CASTELLANO

270. THE SPANISH LANGUAGE IN AMERICA.—The development of the Spanish language from the time of the Discovery to the present. 3 s.h. PROFESSOR PREDMORE

275. CONTEMPORARY SPANISH LITERATURE.—The Essay and Lyric Poetry. A study of the revision of national values and literary expression in the twentieth century with particular reference to the crisis of 1898 and to the enrichment of the Spanish tradition through extra-peninsular influences. 3 s.h. PROFESSOR PREDMORE

276. CONTEMPORARY SPANISH LITERATURE.—The Novel. A study of tradition and innovation in the twentieth century Spanish novel with emphasis on the novels of Unamuno, Baroja, Valle Inclán, and Pérez de Ayala. 3 s.h. PROFESSOR PREDMORE

THE TEACHING OF ROMANCE LANGUAGES

218. EVALUATION OF OBJECTIVES AND METHODS. A study of the practical problems involved in teaching on the elementary, secondary, and college levels. Analysis of textbooks, special foreign language programs, audiovisual aids. Critical examination of modern techniques of written and oral testing. 3 s.h. ASSOCIATE PROFESSOR DOW

RUSSIAN

ASSISTANT PROFESSOR WINNER

No graduate degree is presently offered in Russian. The following courses may serve in the minor programs of students in other departments.

201, 202. THE NOVELISTS OF NINETEENTH CENTURY RUSSIA.—The principal writers discussed are Pushkin, Lermontov, Gogol, Goncharov, Saltykov-Shchedrin, Turgenev, Dostoevsky and Tolstoy. Discussion of the main cultural currents of the period. Attention is given to the literary relations between Russia and the West. Extensive readings in English translation. Lectures, oral reports and term paper each semester. A knowledge of Russian not required. 6 s.h.

ASSISTANT PROFESSOR WINNER

SOCIOLOGY AND ANTHROPOLOGY

PROFESSOR JENSEN, CHAIRMAN—215E SOCIAL SCIENCE BUILDING; PROFESSOR HART, DIRECTOR OF GRADUATE STUDIES—215D SOCIAL SCIENCE BUILDING; PROFESSOR THOMPSON; ASSOCIATE PROFESSORS LABARRE AND SCHETTLER; ASSISTANT PROFESSOR ROY

The Department of Sociology and Anthropology offers graduate work leading to the A.M. and Ph.D. degrees. Before undertaking advanced work in this department, a student must have completed a minimum of twelve semester hours of approved preliminary courses in the field, and twelve additional semester hours in the field or in related work. A student who is deficient in the minimum required work will be asked to take additional undergraduate courses agreed upon in conference with the Director of Graduate Studies.

Candidates for advanced degrees in sociology usually take minor work in psychology, economics, political science, education, history, or religion. Detailed requirements for the minor work, and for majors in other departments who wish to present sociology as minor work, may be obtained from the Director of Graduate Studies.

The courses planned for 1957-58 are 212, 213, 214, 235, 237, 238, 245, 248, 250, 261, 271, 273, 276, 292, 293, 330, 340, 380, 381, 382. Either 91-92, 93 or 94, or 101 is prerequisite for all courses.

ANTHROPOLOGY

212. PRIMITIVE RELIGION.—The ethnography, the social functions and the socio-psychological meanings of religion in primitive societies. 3 s.h.

ASSOCIATE PROFESSOR LABARRE

213. PERSONALITY AND SOCIETY.—The sociology and social psychology of human personality, its origins in the primary group, its nature and varieties and its integrations into secondary group institutions. 3 s.h.

ASSOCIATE PROFESSOR LABARRE

214. PERSONALITY AND CULTURE.—The influence of culture patterns and social institutions upon character structure, socialization of the individual, and the dynamics of human personality. Comparative anthropological materials will be drawn upon. Prerequisite: course 213. 3 s.h.

ASSOCIATE PROFESSOR LABARRE

330. SEMINAR IN ANTHROPOLOGY.—A seminar for advanced students who wish to pursue individual studies in racial or cultural anthropology. 1 to 3 s.h. each semester.

ASSOCIATE PROFESSOR LABARRE

COMMUNITY, RACE AND CULTURE

233. RURAL SOCIOLOGY.—The sociology of the land; peasant and folk societies and cultures; patterns of rural settlement like the farm, the plantation, the ranch and others; rural personality types; the changing character of rural life; rural problems. 3 s.h. Second semester.

PROFESSOR THOMPSON

235. URBAN SOCIOLOGY.—A study of the city and civilization, the newspaper, the social survey, the slum and housing, neighborhoods and natural areas, urban institutions, urban problems, and city planning. 3 s.h.

PROFESSOR THOMPSON

237. **COMMUNITY AND SOCIETY.**—This course seeks to provide a frame of reference for the analysis and ordering of facts pertaining to the diverse cultures of the world, the State, the world community, the Great Society, news, mass behavior, social problems, races and classes. 3 s.h. PROFESSOR THOMPSON

238. **RACE AND CULTURE.**—A study of the nature of race and of the relationships and problems of race. 3 s.h. PROFESSOR THOMPSON

262. **EDUCATION AND THE CULTURAL PROCESS.**—A study of education (1) as carried on traditionally among preliterate and folk peoples, and (2) as it becomes a problem in racially and culturally complex societies like that of the United States. 3 s.h. (w) PROFESSOR THOMPSON

340. **SEMINAR.**—Methodological problems involved in the study of race relations, urban and rural life, the South and society generally. 3 s.h. *each semester.* PROFESSOR THOMPSON

COLLECTIVE BEHAVIOR

243. **SOCIAL ATTITUDES AND COLLECTIVE BEHAVIOR.**—Study of attitudes as products of social interaction; organization of attitudes into personal behavior patterns; expression of social attitudes in social, political and industrial groups; social unrest and the behavior of crowds and mobs; analysis of social movements, strikes, revolutions, and other group organizations. 3 s.h.

ASSOCIATE PROFESSOR SCHETTLER

245. **THE SOCIOLOGY OF PERSONALITY DISORGANIZATION AND ADJUSTMENT.**—A sociological approach to the disorganization of personality with special emphasis upon the personality maladjustments resulting from different types of social situations, and the sociological techniques of personality reorganization and adjustment. 3 s.h. (w) ASSOCIATE PROFESSOR SCHETTLER

246. **PUBLIC OPINION AND PROPAGANDA.**—Nature and development of public opinion; relation to attitudes, biases, stereotypes and controversial issues; role of leaders, pressure groups and minority groups; use of radio, press, motion picture and graphic arts; propaganda and censorship; measurements of public opinion. 3 s.h. ASSOCIATE PROFESSOR SCHETTLER

248. **PRESSURE GROUPS AND PUBLIC RELATIONS.**—A study of the nature and activities of pressure group organizations in the fields of business, industry, politics, education, religion, patriotism, etc., that seek to influence public opinion, with special attention being given to the roles and functions of public relations counsellors and lobbyists. 3 s.h. (w) ASSOCIATE PROFESSOR SCHETTLER

250. **MARRIAGE AND THE FAMILY.**—An analysis of contemporary marriage and family experience with emphasis on its functions, problems, resources and values. 3 s.h.

SOCIAL ORGANIZATION AND DISORGANIZATION

261. **PROBLEMS IN INDUSTRIAL SOCIOLOGY.**—Sociological analysis of human relations problems that confront administrators of industrial institutions and leaders in industrial community life. In this course emphasis falls on the examination of concrete case materials and the appraisal of published research with consideration of possibilities for further development of scientific procedures in the field of industrial sociology. 3 s.h. ASSISTANT PROFESSOR ROY

271. **SOCIAL PATHOLOGY.**—A study of the causes, extent, significance, and constructive treatment of the principal forms of pathology in modern society; natural disasters, poverty, physical defectiveness, malnutrition, mental deficiency, mental disease, undirected leisure activities and unstandardized commercial recreation, alcoholism, prostitution, vagrancy, and delinquency. (Not open to students who have had Sociology S274.) 3 s.h. PROFESSOR JENSEN

273. **SPECIAL PROBLEMS IN SOCIAL PATHOLOGY.**—Research projects in social and personal disorganization, limited to advanced students with the approval of the instructor. 1 to 3 s.h. *each semester.* PROFESSOR JENSEN

276. CRIME AND DELINQUENCY.—A study of the original tendencies of man and the problem of socializing these tendencies; the relation of physical and mental defectiveness and untoward influence in the home and neighborhood to crime; the development of criminological theory and procedure, emphasizing penal and reform methods, and especially modern methods of social treatment and prevention of crime. 3 s.h.

PROFESSOR JENSEN

380. SEMINAR IN APPLIED SOCIOLOGY.—Special research problems in social pathology, child welfare, criminology, and related topics. 1 to 3 s.h. *each semester.*

PROFESSOR JENSEN

SOCIAL THEORY

286. SOCIAL ETHICS.—A study of sociological fundamentals underlying ethics, including the controversy between materialistic and idealistic social thinkers, the nature of personalities and of social organization, the nature of social values, types of social interaction and their effects upon general social values, underlying principles and facts of social change, and the bearings of all these upon certain social problems. 3 s.h.

288. CONTEMPORARY PROBLEMS IN CULTURAL LAG.—An exploration of such sociological problems as social evolution, cultural lag, conflict, accommodation, leadership, and social reform, in relation to the crisis of civilization precipitated by the development of the atomic bomb and by kindred discoveries and inventions. 3 s.h.

381. PRINCIPLES OF SOCIOLOGY.—A critical study of sociological theory. The sociological theories of recent writers will be critically examined with a view to laying the foundation for a constructive theory of the social life in modern biology and psychology. Discussions and papers by the class. 3 s.h.

PROFESSOR JENSEN

382. HISTORY OF SOCIOLOGICAL THEORY.—Lectures on the development of social thought from Aristotle to the present; the social philosophies of Plato, Aristotle, St. Augustine, Thomas Aquinas, Machiavelli, Bodin, Hobbes, Locke, Vico, Montesquieu, Rousseau, Condorcet, and the sociological systems of Comte, Spencer, Schäffle, Lillienfeld, Gumplowicz, Ratzel, and Ward will, among others, be considered. A large amount of assigned reading will be required in this course. The student is advised to correlate this course with related courses in economics, history, political science, and philosophy. 3 s.h.

PROFESSOR JENSEN

METHODS OF SOCIAL RESEARCH

292. STATISTICAL TECHNIQUES IN SOCIOLOGY.—Intended for graduate students, and for undergraduates who are ready to undertake original statistical research projects. 3 s.h. (*first semester.*)

293. SPECIAL PROBLEMS IN SOCIAL STATISTICS.—Applications of statistical techniques to specific research topics; limited to advanced students with permission of the instructor. 1 to 3 s.h.

391. SEMINAR IN SOCIAL STATISTICS.—Special research problems in social statistics, social ethics, the family or related topics. 1 to 3 s.h.

393. OPERATIONAL SOCIOLOGY.—A seminar for advanced students, presenting an operational philosophy of social science as a basis for research in sociology. Examples of operational procedure will be analyzed. Assigned projects will embody applications of the operational method. Prerequisite: one of the following: Sociology 292 or Economics 237-238, or Education 209, or Mathematics 124, or some other acceptable course in statistics. 3 s.h.

RELATED COURSES IN OTHER DEPARTMENTS

Economics 215, 216, 217; Philosophy 205; Political Science 223, 224; Psychology 206.

ZOOLOGY

PROFESSOR WILBUR, CHAIRMAN—224 BIOLOGY BUILDING; PROFESSOR SCHMIDT-NIELSEN, DIRECTOR OF GRADUATE STUDIES—337 BIOLOGY BUILDING; PROFESSORS GRAY AND BOOKHOUT; ASSOCIATE PROFESSORS BAILEY, HORN, HUNTER, AND ROBERTS; ASSISTANT PROFESSORS LIVINGSTONE, NACE, SANDEEN, VERNBERG, AND WARD

To undertake study toward an advanced degree in zoology a student should have completed an undergraduate major in zoology or its equivalent. This normally amounts to twenty-four or more hours of course work distributed among various fields of zoology, and must include comparative vertebrate anatomy or vertebrate zoology, embryology, and physiology. At least a year of chemistry is required. Physics is recommended. Candidates for the doctorate will be expected to have had not less than two years of chemistry and a year of botany. For some phases of zoology, organic chemistry is essential.

Required work for the A.M. ordinarily includes 18 semester hours of advanced course work in zoology, six semester hours of course work in a minor department, and an acceptable thesis.

Candidates for the Ph.D. degree are expected to be broadly trained zoologists. The program of each candidate is determined by a committee which reviews previous training and sets specific requirements to be met. Normally the program includes one or more graduate courses in each of several fields of zoology; courses in a minor subject; wide reading in science in general and in biology in particular; research; and a dissertation based on original work. A first draft of the thesis must be submitted to the major professor by March 15 of the year in which the degree is to be conferred.

For 1957-58 the courses planned are 204, 222, 224, 245, 252, 271, 276, 303, 307, 328, 351-352, 353-354, 355-356.

FOR SENIORS AND GRADUATES

204. **ADVANCED PARASITOLOGY.**—Lectures, conferences, readings, and laboratory work dealing with practical and theoretical problems of classification, morphology, and host relations of animal parasites. Prerequisite: Zoology 161 or equivalent. 4 s.h. ASSOCIATE PROFESSOR HUNTER

216. **LIMNOLOGY.**—A study of lakes, ponds and streams, including their origin, development, geochemistry, energy balance, productivity, and the dynamics of the plant and animal communities living in them. Lectures, field trips, laboratory work. Prerequisites: Chemistry 1 and 2, Physics 1 and 2, Mathematics 51, and one year of biology; or permission of instructor. 4 s.h. ASSISTANT PROFESSOR LIVINGSTONE

222. **ENTOMOLOGY.**—Anatomy, physiology, embryology, and classification of insects. Prerequisite: one year of zoology. 4 s.h. PROFESSOR GRAY

224. **VERTEBRATE ZOOLOGY.**—A study of the life histories, adaptations, ecology, and classification of vertebrate animals. Prerequisite: Zoology 53. 4 s.h. ASSOCIATE PROFESSOR BAILEY

238. **SYSTEMATIC ZOOLOGY.**—The fundamental theory and practice involved in the collection, identification and classification of animals. Prerequisite: Zoology 1 and 2. 4 s.h. ASSOCIATE PROFESSOR BAILEY

245. **RADIATION BIOLOGY.**—An introductory course which deals with the basic physical, chemical and biological principles upon which the study of the biological effects of radiation is based. Laboratory work and lectures. Prerequisites: Mathematics through trigonometry, college physics, inorganic and organic chemistry. 4 s.h.

252. **COMPARATIVE PHYSIOLOGY.**—The physiological mechanisms of animals studied on a comparative basis. Prerequisite: Zoology 151 or equivalent. 4 s.h. PROFESSOR SCHMIDT-NIELSEN

253. ADVANCED VERTEBRATE MORPHOLOGY.—Descriptive and experimental studies in comparative vertebrate morphogenesis. Lectures, readings, reports and laboratory. Prerequisites: Zoology 53, 92. 4 s.h. ASSOCIATE PROFESSOR HORN

271. CELLULAR PHYSIOLOGY.—The physiological processes of living matter approached through studies of cells. Prerequisites: two years of biology and at least one year of chemistry. 4 s.h. PROFESSOR WILBUR

274. INVERTEBRATE ZOOLOGY.—A study of structure, functions, and habits of invertebrate animals under normal and experimental conditions. Field trips will be made to study, collect, and classify animals in their natural habitats. Prerequisites: Zoology 1 and 2. 4 s.h. PROFESSOR BOOKHOUT

276. PROTOZOOLOGY.—The morphology, physiology, taxonomy, and culture of protozoa. Prerequisites: Zoology 1 and 2. 4 s.h. PROFESSOR BOOKHOUT

278. INVERTEBRATE EMBRYOLOGY.—Lectures, readings and laboratory work dealing with rearing, development and life history of invertebrates. Prerequisite: Zoology 92. 4 s.h. PROFESSOR BOOKHOUT

FOR GRADUATES

303. ECOLOGY.—Relation of animals to environment. Lectures, readings, reports, conferences; laboratory and field work. 4 s.h. PROFESSOR GRAY

307. FOUNDATIONS OF ZOOLOGY.—Lectures, readings, and discussions on the background and training essential for a professional zoologist. 2 s.h.

ALL MEMBERS OF THE GRADUATE STAFF

324. ADVANCED PHYSIOLOGY.—Recent advances in physiology. Lectures, conferences and laboratory work. Prerequisite: Zoology 252 or 271. 4 s.h.

PROFESSORS SCHMIDT-NIELSEN AND WILBUR

328. EXPERIMENTAL EMBRYOLOGY.—Lectures, readings, reports and laboratory work. Prerequisites: Zoology 53, 92, 156, 271, or equivalent. 4 s.h.

ASSISTANT PROFESSOR NACE

343. CYTOLOGY.—The structure of the cell. Lectures, readings, reports and laboratory work. Prerequisites: Zoology 53, 92, 156, or equivalent. 4 s.h.

ASSOCIATE PROFESSOR ROBERTS

351, 352. ZOOLOGICAL JOURNAL CLUB.—A weekly meeting of graduate students and faculty to hear reports and to discuss biological facts, theories, and problems. One hour a week throughout the year. No credit.

ALL MEMBERS OF THE GRADUATE STAFF

353, 354. RESEARCH.—Students who have had proper training may carry on research under direction of members of the Staff in the following fields. Hours and credits to be arranged.

(a) EMBRYOLOGY.

ASSISTANT PROFESSOR NACE

(b) PHYSIOLOGY.

PROFESSORS SCHMIDT-NIELSEN AND WILBUR,

ASSISTANT PROFESSOR SANDEEN

(c) HISTOLOGY, CYTOLOGY.

ASSOCIATE PROFESSOR ROBERTS

(d) INVERTEBRATE ZOOLOGY, INVERTEBRATE EMBRYOLOGY.

PROFESSOR BOOKHOUT

(e) ECOLOGY, ENTOMOLOGY, VERTEBRATE ZOOLOGY. PROFESSOR GRAY

(f) VERTEBRATE MORPHOLOGY AND MORPHOGENESIS.

ASSOCIATE PROFESSOR HORN

(g) PARASITOLOGY.

ASSOCIATE PROFESSOR HUNTER

(h) VERTEBRATE ZOOLOGY, SYSTEMATIC ZOOLOGY.

ASSOCIATE PROFESSOR BAILEY

(i) LIMNOLOGY, OCEANOGRAPHY.

ASSISTANT PROFESSOR LIVINGSTONE

(j) ECOLOGY.

ASSISTANT PROFESSOR VERNBERG

(k) GENETICS.

ASSISTANT PROFESSOR WARD

355, 356. SEMINAR.—One or more seminar courses in particular fields are given each semester by various members of the staff. These will be in the fields indicated under courses 353-354 above. 2 s.h.

GRADUATE CREDIT FOR COURSES TAKEN IN THE SCHOOL OF LAW

Upon the recommendation of the Director of Graduate Studies, and upon the approval of the Dean of the Graduate School, students in the Social Sciences may take certain courses in the School of Law for graduate credit. In exceptional instances courses in the School of Law may be considered as fulfilling a student's requirements for a minor.

COURSES IN THE MEDICAL SCHOOL OPEN TO GRADUATE STUDENTS

PROFESSORS BEARD, F. BERNHEIM, CONANT, EADIE, EVERETT, HALL, HANDLER, HETHERINGTON, MARKEE, D. T. SMITH, AND TAYLOR; ASSOCIATE PROFESSORS BECKER, M. I. C. BERNHEIM, DUKE, PEELE, PENROD, RUNDLES, AND SCHWERT; ASSISTANT PROFESSORS HULL AND KAMIN; VISITING LECTURER LARSH

The facilities of the several Departments of the Medical School listed below are available to qualified graduate students, already admitted to the Graduate School, for independent or supervised research and investigation, whether or not they are working toward advanced degrees.

Graduate students wishing to pursue a major or minor in any of the following departments, or to enroll in any of the courses listed below, should consult or write the appropriate Director of Graduate Studies: Anatomy, Professor J. E. Markee; Microbiology, including Mycology, Parasitology and Hematology, Professor N. F. Conant; Biochemistry and Nutrition, Professor Philip Handler; Physiology and Pharmacology, Professor F. G. Hall.

Because of the special schedules maintained in the Medical School, graduate students should write the Director of Graduate Studies of the department in which they are interested to ascertain the precise dates when courses are offered.

ANATOMY

Completion of training equivalent to that required of an undergraduate majoring in biology or zoology is prerequisite for these courses in human anatomy.

M201. GROSS HUMAN ANATOMY.—A course especially designed for graduate students, comprising a complete dissection of the cadaver. The laboratory work is supplemented by conferences which place emphasis on the biological aspects of the subject. Oct.-Feb. Hours and credits (maximum 8 s.h.) by arrangement. Prerequisite: adequate training in comparative anatomy and embryology.

PROFESSORS MARKEE AND EVERETT; ASSOCIATE
PROFESSORS BECKER AND DUKE

M202. MICROSCOPIC ANATOMY.—Conferences and laboratory work on the morphological characteristics of the tissues of the animal body. The work is based upon a study of fresh and prepared material and is approached from the physiological viewpoint. Oct.-Feb. Hours and credits (maximum 3 s.h.) by arrangement. Prerequisite: adequate training in histology or cytology.

PROFESSORS MARKEE, HETHERINGTON, AND EVERETT;
ASSOCIATE PROFESSORS BECKER AND DUKE

M203. ANATOMY OF THE NERVOUS SYSTEM.—A study of the gross and microscopic structure of the human central nervous system, special attention being paid to the structural and functional relationships between the various nuclei and fiber tracts. Oct.-Feb. Hours and credits (maximum 4 s.h.) by arrangement. Prerequisite: Anatomy M201.

PROFESSORS MARKEE AND EVERETT; ASSOCIATE
PROFESSORS PEELE, BECKER, AND DUKE

M204. NEUROANATOMICAL BASIS OF BEHAVIOR.—A study of the gross and microscopic anatomy of the nervous system with emphasis on the structural and functional relationships between tracts, nuclei, and cortical areas. Insofar as possible the result of deficit in a system or systems will be demonstrated by motion picture aids, and the mechanisms involved will be reviewed and discussed. Restricted to graduate students with the equivalent of a major in psychology. 3 s.h.

PROFESSOR HETHERINGTON

M312. RESEARCH.—Individual investigations in the various fields of anatomy. Credits to be arranged.

PROFESSORS MARKEE, EVERETT, HETHERINGTON;
ASSOCIATE PROFESSORS PEELE, DUKE, AND BECKER

BIOCHEMISTRY AND NUTRITION

The program of graduate studies in biochemistry is designed primarily for Ph.D. candidates who intend to pursue a research career in this field. Candidates for the A.M. degree only are not encouraged to apply for admission and are accepted only under exceptional conditions. Preference is given to students who have completed one year of graduate work in chemistry, physics, or biology at Duke University or at some other approved institution. As preparation for courses in advanced chemistry, the student must have completed college courses in analytical geometry and elementary calculus. He also must have had adequate preparation for the reading examination in French and German, which is required of candidates for the Ph.D. degree.

M241. GENERAL BIOCHEMISTRY AND NUTRITION.—Three lectures, four laboratory periods of three hours each, one two-hour seminar weekly for eighteen weeks. Prerequisites: general chemistry, organic chemistry, physical and analytical chemistry, and at least one year of college biology. Feb.-June. 8 s.h.; without laboratory work, 3 s.h.

PROFESSORS HANDLER AND TAYLOR; ASSOCIATE PROFESSORS
M. L. C. BERNHEIM, SCHWERT; ASSISTANT
PROFESSOR KAMIN; DR. BYRNE

M243-244. GENERAL BIOCHEMISTRY.—An introductory but intensive course in the broader aspects of biochemistry. Topics stressed include the chemistry of naturally occurring materials, nature of enzyme action, intermediary metabolism and chemical aspects of the specialized behavior of mammals, plants and micro-organisms. Prerequisites: organic chemistry and at least one year of college biology. 6 s.h.

PROFESSOR HANDLER; ASSOCIATE PROFESSOR
SCHWERT; ASSISTANT PROFESSOR
KAMIN; DR. BYRNE

M245. LABORATORY METHODS IN BIOCHEMISTRY.—A laboratory course emphasizing the procedures and instruments of biochemical research. Each technic is employed in the course of a classical experiment demonstrating an important biochemical finding. Prerequisite: Biochemistry M243-44 or their equivalent. 2 s.h.

PROFESSOR HANDLER; ASSOCIATE PROFESSOR SCHWERT;
ASSISTANT PROFESSOR KAMIN

M343-344. BIOCHEMISTRY OF PROTEINS AND ENZYMES.—A lecture and seminar course devoted to the chemical, physical and biological properties of proteins and enzymes. In the first semester, general aspects of protein chemistry will be considered; in the second semester specific proteins and enzyme systems will be reviewed. 4 s.h.

ASSOCIATE PROFESSOR SCHWERT

M345-346. SEMINAR.—Required of all graduate students majoring in biochemistry, one hour per week. 2 s.h.

PROFESSOR HANDLER; ASSOCIATE PROFESSOR SCHWERT;
ASSISTANT PROFESSOR KAMIN

M347-348. BIOCHEMICAL RESEARCH.—A laboratory course in which the students are introduced to specialized concepts and methods currently employed in biochemical research. This will be accomplished by rotating assignment of the students to the various special laboratories of the department. Prerequisite: Biochemistry M241 or its equivalent. 2, 3, or 4 s.h.

PROFESSOR HANDLER; ASSOCIATE PROFESSOR
SCHWERT; DR. BYRNE

M349-350. INTERMEDIARY METABOLISM.—A seminar course devoted to a study of the detailed mechanisms of carbohydrate, fat and protein metabolism. Given alternately with Biochemistry M351-352. Prerequisite: Biochemistry M241 or M243-44 or their equivalent. 4 s.h.
PROFESSOR HANDLER

M351. NUTRITION.—A seminar course in which the chemical and physiological behavior of essential nutritional factors is considered, as well as the nature of deficiency states. Prerequisite: Biochemistry M241 or its equivalent. Given alternately with Biochemistry M349-350. 2 s.h.
PROFESSOR HANDLER

M354. BIOCHEMISTRY OF DISEASE.—A lecture and seminar course in the biochemical aspects of the pathogenesis, diagnosis, and therapy of diseases of metabolism. 2 s.h.
PROFESSOR HANDLER

MICROBIOLOGY

M221. BACTERIOLOGY AND IMMUNOLOGY.—This course is devoted primarily to the study of the biological and immunological relationships of microorganisms (bacteria, fungi, Rickettsia, and viruses) in disease. It is not a course in bacteriologic technique. An additional course in technical methods is provided for those who require it. Five lectures, two 1-hour conferences and three laboratory periods of 3 hours each weekly, in fall quarter. Prerequisites: courses in general zoology, general botany, histology and comparative anatomy, general and organic chemistry. 6 s.h.

PROFESSORS D. T. SMITH, CONANT;
ASSOCIATE PROFESSOR WILLETT

M323. ADVANCED BACTERIOLOGY AND IMMUNOLOGY.—This course is intended primarily for graduate students majoring in bacteriology, but it is also available as a minor to other graduate students in related fields, to whom it is recommended by respective supervising committees and with the approval of the Department of Bacteriology. Prerequisites: Bacteriology and Immunology, M221. 8 s.h.
PROFESSOR D. T. SMITH

M324. RESEARCH SEMINAR ON VIRUSES.—Limited to advanced students. 2 s.h. per semester.
PROFESSOR BEARD

M325. MEDICAL MYCOLOGY.—This course is intended to familiarize the graduate student majoring in mycology with the fungi causing disease in man and animals. The course includes practical laboratory work with materials from patients in Duke Hospital and those sent to the Duke Fungus Registry from outside sources. Prerequisites: A.M. in botany with major in mycology and M221. Course limited to four students each year. 8 s.h.
PROFESSOR CONANT

HEMATOLOGY

M211. HEMATOLOGY.—Three lectures and three laboratory periods of 3 hours each, weekly, for eleven weeks in the spring quarter. Prerequisites: courses in general zoology, general botany, histology and comparative anatomy. 4 s.h.

ASSOCIATE PROFESSOR RUNDLES

MEDICAL PARASITOLOGY

M291. MEDICAL PARASITOLOGY.—One lecture and one three-hour laboratory period per week for eleven weeks during the fall quarter. Prerequisites: courses in Zoology 204, general botany, histology and comparative anatomy. 1 s.h.
PROFESSOR CONANT; ASSOCIATE PROFESSOR LARSEN

PHYSIOLOGY AND PHARMACOLOGY

M261-262. HUMAN PHYSIOLOGY.—Six lectures and twenty laboratory hours per week. Prerequisites: Anatomy M201 and Biochemistry M241 (or equivalents) and at least one year of college physics. Feb.-June. Credits depending on work taken. (Maximum 8 s.h.)
PROFESSOR HALL AND ALL MEMBERS
OF THE GRADUATE STAFF

M365. RESPIRATION AND AERO-PHYSIOLOGY.—A study of the fundamental respiratory processes in living organisms, and of the special physiological responses and adjustments of the individual during high altitude flight. Lectures, conferences, laboratory. Prerequisites: M261-262 or equivalent. 4 s.h.
PROFESSOR HALL

M369. PHARMACOLOGY. MODE OF ACTION OF DRUGS.—Studies and discussions of the pharmacological action of drugs in terms of biochemical and physiological processes. Lectures, conferences, and laboratory. Prerequisites: M261-262 or equivalent. 4 s.h. PROFESSOR F. BERNHEIM

M370. SEMINAR.—A weekly meeting of graduate students and staff in which papers reviewing classical and current physiological literature are reported. Required of all graduate students who are candidates for the A.M. or Ph.D. degree. 2 s.h. PROFESSORS HALL AND BERNHEIM; ASSOCIATE PROFESSOR PENROD; AND ASSISTANT PROFESSOR HULL

M372. RESEARCH.—Individual investigations in the various fields of physiology. Credits to be arranged. PROFESSORS HALL AND BERNHEIM; ASSOCIATE PROFESSOR PENROD; AND ASSISTANT PROFESSOR HULL

THE DIVINITY SCHOOL

Fall Semester begins September 19, 1957

Spring Semester begins January 29, 1958

General Information



HISTORICAL STATEMENT

THE Indenture of Trust signed on December 11, 1924, by Mr. James B. Duke, which established Duke University, mentioned first among its objects the training of ministers of the Gospel. The Divinity School was, accordingly, the first of the graduate professional schools to be organized. Its work began with the year 1926-27, the formal opening exercises being held on November 9, 1926.

The Reverend Doctor Edmund Davison Soper was the first dean of the Divinity School. He resigned in 1928 to become President of Ohio Wesleyan University, and was succeeded by the Reverend Doctor Elbert Russell, and the latter in turn in 1941 by the Reverend Doctor Paul Neff Garber. In 1944, Dean Garber was elected to the episcopacy of the Methodist Church, and Doctor Harvie Branscomb assumed the duties of the dean's office. In 1946, Dean Branscomb became Chancellor of Vanderbilt University, and in 1947 the Reverend Doctor Paul E. Root was elected dean but died before he could assume the office. The Reverend Doctor Harold A. Bosley became dean in 1947 and resigned in 1950 to become the pastor of the First Methodist Church, Evanston, Ill. The Reverend Doctor James Cannon was appointed Dean of the Divinity School March 1, 1951.

THE PURPOSE OF THE DIVINITY SCHOOL

The primary purpose of the Divinity School is to provide training for individuals planning to enter the Christian ministry. This includes not only prospective ministers in local churches, but also those preparing themselves to be missionaries at home and abroad, directors of Christian Education, teachers of religion, chaplains, and social workers. Vital to all of these forms of service is a full understanding of the beginnings, content, and history of the Christian faith and its special pertinence for the spiritual needs of the modern world. Studies of a broad and thorough character directed toward such an understanding constitute the center of the curriculum of the Divinity School and are regarded as the basic training for all prospective Christian workers. Specific training in the skills required of local ministers and of leaders in the work of Christian Education are also provided. As funds become available for the purpose and as needs appear, additional training in specialized skills and areas of knowledge will be added to the curriculum.

Bound by ties of history and obligation to the Methodist Church, the Divinity School is ecumenical in its interests and outlook. Its faculty is limited to no one denomination, but draws upon the resources of them all. Students of the several denominations are admitted on the same basis. The Divinity School conceives its task to be one of broad service to the Church in all of its forms.

THE RELATION OF THE DIVINITY SCHOOL TO DUKE UNIVERSITY

The Divinity School is an integral unit of the University and shares fully in its activities, privileges, and responsibilities. The Sunday services in the University Chapel give Divinity School students an opportunity to hear each year a number of leading ministers of the country. The University Libraries make easily accessible a rich collection of 1,275,000 volumes. Selected courses in the Graduate School of Arts and Sciences and in the professional schools are open to Divinity School students without payment of additional fees. The general cultural and recreational resources of the University are available to them on the same basis as to other students.

LIBRARY RESOURCES

Detailed information concerning the resources of the Divinity School Library, religious and social life, and public lectures is given in the *Bulletin of the Divinity School*.

COURSES OF STUDY OFFERED BY THE DIVINITY SCHOOL

The Divinity School offers two courses of study. The basic course is that which leads to the degree of Bachelor of Divinity. This is a three-year course and is recommended to all those preparing themselves for the work of the regular pastoral ministry. Students who hold pastoral charges, or other remunerative work requiring any substantial time apart from their studies, may carry only reduced schedules of work, and, in most cases, unless work is taken in the Duke University Summer Session, will spend four years in completion of the requirements for the B.D. degree.

The Divinity School offers also a course of study leading to the degree of Master of Religious Education. This course is designed for individuals who wish to become directors or to take other specialized positions in the work of Christian Education. The course does not provide a general preparation for the work of the regular ministry and cannot serve as a substitute for it. No exchange of credits between the two courses is permitted, nor can departmental courses taken be credited toward more than one degree. Only a limited number of candidates for the Master of Religious Education degree will be accepted annually.

COURSES OF STUDY IN RELIGION OFFERED BY THE GRADUATE SCHOOL OF ARTS AND SCIENCES

Students who desire to pursue work in religion beyond that for the Bachelor of Divinity degree should register in the Graduate School of Arts and Sciences, through which the degrees of Master of Arts and Doctor of Philosophy in Religion may be obtained. This advanced work is administered through the Department of Religion of the Graduate School and is available to qualified persons of all denominations on an equal basis. Study and research may be pursued in three fields: (1) Biblical Studies; (2) Studies in Church History; and (3) Studies in Christian Thought. A list of courses approved by the Graduate Faculty for work in these fields, together with general requirements for admission to the Graduate School, may be found in the *Bulletin of the Graduate School*. This Bulletin is available on application to the Dean of the Graduate School of Arts and Sciences, Duke University.

A limited number of University Scholarships and Fellowships, among which are four Gurney Harriss Kearns Fellowships of \$1,600 each, may be obtained by exceptionally qualified students. Applications for these must be submitted to the Dean of the Graduate School on University forms not later than March 1 of each year.

Inquiries concerning specific requirements of the Department of Religion in the Graduate School should be addressed to Professor H. Shelton Smith, Director of Graduate Studies in Religion.

DEMPSTER GRADUATE FELLOWSHIPS

The Methodist Board of Education offers each year a number of Dempster Graduate Fellowships for graduates of Methodist Theological Schools, who are engaged in programs of study leading to the degree of Doctor of Philosophy in Religion with a view to teaching in Methodist colleges and seminaries. Several Divinity School graduates have held these fellowships.

FACILITIES FOR ADVANCED STUDY IN THE AMERICAN SCHOOLS OF ORIENTAL RESEARCH

The Divinity School of Duke University is one of the supporting members of the American Schools of Oriental Research. Accordingly, students in the Divinity School have the privilege of attending the American School in Jerusalem or the one in Bagdad without charge for tuition. They may also compete for the financial aids which are offered annually by the Schools. These consist of four fellowships, the stipends depending upon available funds.

DIVINITY SCHOOL SEMINARS

The Divinity School, under provision of the James A. Gray fund, conducts each year two extension seminars providing two-day study courses for ministers. In 1956-57 seminars were conducted at the Central Methodist Church, Shelby, N. C. and the Hay Street Methodist Church Fayetteville, N. C. Lecturers were Dr. Gerald Knoff, Dr. W. Arthur Kale, and Dr. McMurry S. Richey.

SCHOOL FOR APPROVED PASTORS

In cooperation with the Department of In-Service Training of the Board of Education and the Southeastern Jurisdictional Conference of the Methodist Church, the Divinity School conducts a School for Approved Pastors of the Methodist Church. The school for 1957 is scheduled for July 17-August 9.

STUDENT GOVERNMENT ASSOCIATION

Each student of the Divinity School upon enrollment becomes a member of the Student Government Association. Four officers are elected by the student body annually in April to serve for the following year. These officers, the President, Vice-President, Secretary, and Treasurer, along with the Dean of the Divinity School, serve as the Executive Committee, and the committee chairmen constitute the Student Council, which meets in monthly session to review and coordinate the programs of the several committees. It is desired that all students contribute to the corporate life of the School through active participation in the work of the committees. The Association operates on the basis of a unified budget, each student contributing to its support dues in the amount of \$5.00 per year, payable at the time of fall registration; \$2.50 at spring registration for students who enter at that time.

STUDENT PUBLICATIONS

The Divinity School student body sponsors and publishes a pictorial yearbook, *The Circuit Rider*.

Admission and Requirements for Degrees



Requirements for Admission

THE Divinity School is a fully accredited member of the American Association of Theological Schools, and is one of the ten accredited seminaries of the Methodist Church. Candidates for admission must hold the degree of A.B., or its equivalent, based upon four years of work beyond secondary education, in a college which is approved by one of the regional accrediting bodies, and their college records must be such as to indicate their ability to carry on graduate professional studies. They will be admitted without examination on presentation of an official, satisfactory transcript of college and all other academic credits which they may have secured. Recommendations from three responsible persons are required. Women will be admitted on the same basis as men.

Applications may be rejected where transcripts show a considerable number of low grades even though the applicant may have eventually received a degree based upon a bare "C" average, especially where the applicant has required longer than the normal eight semesters of college work. Papers filed with applications are not returned.

It is desirable that each applicant for admission show a "B" average in his college work. An average of less than "C+" is not normally considered sufficient for admission.

The applications of students from foreign countries will be considered, each on its own merits, the general principle being that a training equivalent to that of a baccalaureate degree from an accredited American college must have been secured.

Because of the necessity of limiting admission of full three-year applicants, the Divinity School does not accept transfer students from other theological schools.

In addition to an adequate academic preparation, applicants must satisfy the Faculty as to their Christian character and purpose. A formal application blank may be secured from the office of the Divinity School. This must be filled out and returned by all candidates for admission. Application for admission should be made as soon as possible after the beginning of the applicant's last semester of college work. Applications received after April 1 cannot be assured of admis-

sion, financial aid or dormitory rooms for the ensuing academic year. A minimum of thirty days is required to process any application.

All persons admitted to the Divinity School are required to report to the Student Health Service, Duke Hospital, for physical examination on days and at hours specified at the time of matriculation. No admission is final until approved by the Student Health Service, which may require submission of a health certificate prior to arrival of prospective students. Applicants are also required to take certain tests administered by the Bureau of Testing and Guidance.

Persons who do not matriculate at the time for which they were originally admitted forfeit admission and must be formally re-admitted. A student who withdraws from the Divinity School and desires to return at a later date must file with the Dean a written request for a leave of absence.

The number of applications for admission to the School is considerably larger than the number of vacancies. In view of this fact, applicants are required on notification of admission to signify their acceptance within two weeks, and to pay an admission fee of \$15.00. (Make check payable to Treasurer of Duke University and send to the Office of the Dean of the Divinity School.) This fee is applied to the regular first-term bill if the student matriculates; if he fails to do so, the fee is forfeited. This does not apply to the Summer Session.

Under the terms of the Selective Service Act, as it now stands, pre-enrollment for later formal admission may be granted to persons who meet the Divinity School standards and requirements for admission. Applications for pre-enrollment may be addressed to the Office of the Dean. Pre-enrolled students must send transcripts of each year's college work by June 15th of each year in which they are pre-enrolled. *Pre-enrollment does not guarantee final admission*, and a person who has been pre-enrolled for any length of time must send a transcript of work by March 1 of the year in which admission is sought for the ensuing academic year. This must be accompanied by a letter from the college dean or other approved reference certifying to continued academic acceptability, good character and conduct. The admission fee of \$15.00 is due within two weeks of receipt of notice of final admission.

Not over 30 semester hours of Summer Session work may be credited toward the degree of Bachelor of Divinity.

In view of the fact that enrollment must be limited, persons who have already received the B.D. degree from Duke or elsewhere will not be admitted to the Divinity School except as special students in the Summer Session.

Unless all the work offered for the B.D. degree is completed within a period of nine years from the date of beginning, the student will be required to make formal application for re-admission and re-evaluation

of his credits in the light of the then-existing curriculum of the Divinity School. Except in unusual cases, work of a fragmentary character taken over a long period of years, or work taken many years before a student is admitted to the Divinity School, will not be accepted for credit toward the B.D. degree.

ADMISSION ON PROBATION

1. Applicants for admission who are graduates of non-accredited colleges will be considered on their merits, but only a few who give evidence of special promise will be admitted. Specifically, such applicants must show that they have attained a superior average (not less than "B") for a four-year college course.

Admission of such persons will, in every case, be *on probation*.

2. Applicants for admission who are graduates of accredited colleges but whose college transcripts do not fully meet Divinity School standards may also be admitted *on probation* if their recommendations justify consideration.

Probation means:

a. Students who, during the first year of Divinity School work (thirty semester hours), maintain a consistently low average, including one or more failures, will be required to withdraw from the school.

b. Students admitted on probation may carry only limited schedules of work, the amount to be determined by the Dean.

c. In the case of a student admitted on probation, no credit will be granted for any course in which, during the first year's work (thirty semester hours), a grade of less than "C" is recorded, unless the student's entire average in the year during which a "D" grade is received is "C" or better.

d. When the student has been admitted on probation, and is subsequently found to be deficient in the essential requisites of any given area of the "Pre-Seminary Curriculum" (see next section of catalogue), the Divinity School Faculty reserves the right to direct that the student make up such deficiencies by additional courses of study taken in other schools of Duke University in order to qualify for either the B.D. or M.R.E. degree, but without credit for such courses toward those degrees.

Students whose work after admission is not satisfactory may be placed on probation for one or more semesters and may be denied credit for courses in which "D" grades are recorded.

PRE-SEMINARY CURRICULUM

The Divinity School, in substantial agreement with the standards of the American Association of Theological Schools, recommends that prospective candidates for admission keep in mind the desirability of including the following in their undergraduate curriculum:

It is suggested that a student should acquire a total of 90 semester hours or complete approximately three-fourths of his college work in the areas listed below. No work done towards a first college degree may be used toward a Divinity School degree.

<i>Basal Fields</i>	<i>Semesters</i> (At least the number indicated)
English	6
Literature, composition and speech, and related studies	
History, ancient, modern European, and American	3
Philosophy, orientation in history, content and method	3
Religion	3
Psychology	1
A foreign language	4
Greek, Latin, Hebrew, French and German are especially recommended.	
Natural sciences, preferably physics, chemistry and biology	2
Social sciences	6
At least two of the following:	
Sociology, economics, political science, social psychology and education.	

Of the various possible areas of concentration, where areas of concentration are required, a major in English, philosophy, or history is regarded to be the most desirable.

Requirements for the Degree of Bachelor of Divinity

The requirements for graduation stated in this catalogue apply to all students who entered the Divinity School after June 1, 1954.

The requirements for the degree of Bachelor of Divinity fall into six categories as follows:

I. Required Courses, to be taken by all candidates for the degree.

11. Introduction to the Old Testament I	3 s.h.
12. Introduction to the Old Testament II	3 s.h.
13. History of the Church through the Protestant Reformation	4 s.h.
17. Effective Speaking	2 s.h.
18. Early Christian Life and Literature	3 s.h.
19. Introduction to New Testament Theology	3 s.h.
20. Introduction to Christian Theology	4 s.h.
29-30. Sermon Construction—Theory and Practice	4 s.h.

II. Limited-Elective Courses.

These may be used also as free electives after the limited-elective requirements have been met, and for Vocational Group requirements.

1. Two of the following three courses required:

22. The Philosophy of Christian Education	3 s.h.
27. Christian Ethics I	3 s.h.
31. Introduction to Philosophy of Religion (or 121)	3 s.h.

2. Two of the following three courses required:

14. History of the Modern Church	2 s.h.
21. Introduction to the History of Christian Doctrine	2 s.h.
28. Movements in American Protestant Thought	3 s.h.
3. Three of the following four courses required (Students will note special requirements of each Vocational Group):

23. Church Administration I	2 s.h.
24. Philosophy of the Christian World Mission	2 s.h.
25. Educational Theory and Practice in the Church	2 s.h.
26. Introduction to Pastoral Care	2 s.h.
- III. Vocational Groups.
Each student, not later than the end of the middle year, will choose one of the five Vocational Groups listed on Page 20 and will meet the vocational requirements of the group chosen.
- IV. Senior Seminars.
Each student will elect one of the Senior Seminars listed on Page 35.
- V. Free Electives.
The student will choose a sufficient number of courses to make up the total of 90 semester hours required for graduation. Language courses count as free electives.
- VI. English Bible. Demonstration of a detailed knowledge of the contents of the narrative portions of the English Bible. Examinations for this purpose in Old and New Testament are given each spring. (See Calendar for exact dates.)

Students who show deficiencies in English will be required to take special training in addition to meeting the other requirements for the degree. A degree may be withheld on the grounds of English deficiency only.

FACULTY ADVISORS

Each entering student is assigned to a Faculty Advisor at the time of registration and must report to his Advisor within the first three weeks of the semester.

ADMINISTERING THE CURRICULUM

For the administration of the curriculum the following regulations have been adopted:

Full-time students must take the required courses as specified for the respective semesters, and are advised to choose the limited-electives as suggested for each semester.

Since the four and one-half day schedule and the free week-ends have been planned with special reference to the needs of students holding pastoral charges, such students are permitted, but not required, to carry the total of the hours of the required work and limited-electives as suggested for each of the first four semesters, but the total hours may not exceed thirteen without special permission of the Dean. The amount of work in the remaining semesters will be governed by the

same principle. A student who does not do creditable work will be required to reduce his schedule. The schedules of all students are subject to the approval of the Dean, but any reduction below eleven hours must be approved by him.

The status of "special student" may not be granted simply to permit avoidance of the schedule of required courses. Every request for this classification will be carefully investigated and approval voted in each case by the Curriculum Committee in the cases of students already admitted to the Divinity School, and by the Admissions Committee in the case of applicants for admission as "special students."

A fee of \$10.00 is charged for auditing any course except where a student is already paying regular University fees. Permission to audit requires the approval of the Dean and the instructor concerned.

Students working under or assisted by the Duke Endowment, or by Divinity School funds, are required to take one of the Field Work seminars. This work will be taken in the second semester of the first year.

For a student taking both Greek and Hebrew, the Greek may be continued in the second year by postponing one or both of the required courses in Old and New Testament. In such cases, the Hebrew will be the free elective in that year.

A part-time student who desires to begin the study of Greek in the first year may postpone the required course in Old or New Testament.

Suitable entry will be made on the permanent record of any student who is granted permission to deviate from the requirements in the matter of language.

It is the responsibility of each student to see that he meets all requirements for graduation, and to take his courses in proper sequence. He is also responsible for seeing that any special permission granted him to deviate from the normal program is properly recorded in his personal file. Members of the Faculty have no authority to grant deviations unless these are stated in a letter from the instructor in question to the Dean and approved by him; these to be added to the student's permanent record.

Students who are reported by the treasurer's office as delinquent in their accounts will be debarred from credit in courses until cleared by the treasurer's office. Transcripts will not be issued for delinquent students.

GRADING SYSTEM

The grading system of the Divinity School employs the letters A, B, C, D, and F, which have been defined as follows: A = Excellent; B = Superior; C = Average; D = Inferior; F = Failure; WP = Withdrew Passing; WF=Withdrew Failing; and Inc.=Incomplete; P, Passed (satisfactory work in Field Work or M.R.E. Project). (See

below.) No percentage equivalents are stated. A student is expected to maintain an average of C.

The Faculty has voted that in the average course of considerable size, especially required and limited-elective courses, the total of A and B grades should normally not run above 33⅓%. In all courses where the instructor considers attendance a necessary part of the work of the course, a student may not receive a grade of over C if his absences total 12% of the regular class periods, and if the absences total 24% of the class periods he may not receive credit for the course.

Grades of Incomplete received at the end of the fall semester must be removed by the completion of the work of the course not later than March 15. Grades of Incomplete received at the end of the spring semester must be removed by October 1. If the work of the course is not completed by these dates, the grades shall be recorded as "F."

No student shall be permitted to drop a course after the expiration of one-third of the period of instruction of the course without incurring failure, except for causes adjudged by the Dean to be beyond the student's control.

Requirements for the Degree of Master of Religious Education

The course of study leading to this degree is designed for individuals desiring to engage in various forms of Christian Education.

Candidates for this degree must hold the degree of A.B. (or its equivalent), based upon four years of work beyond secondary education, in a college which is approved by one of the regional accrediting bodies, and with academic and personal records which afford promise of competence in this area of service. The course of study will be especially useful for individuals who have had one or more years of experience in Christian Education and desire further training. Candidates for this degree will be limited in number, and individuals interested are urged to apply for admission well in advance of the opening of the academic year. All work offered for this degree, whether in the regular year or in summer sessions, must be completed within a period of six years from the date of beginning.

An applicant must show a college average of not less than C+.

PREREQUISITES

Three of the following five prerequisite studies must have been taken by the candidate prior to his admission to the Divinity School or must be secured, without credit toward the M.R.E. degree, after being admitted:

General Psychology	3 s.h.
Sociology	3 s.h.
Education	3 s.h.
Philosophy	3 s.h.
Religion	3 s.h.

GENERAL REQUIREMENTS

Sixty semester hours of graduate-professional work are required for graduation. Not more than twelve semester hours of this work may be taken in approved summer sessions. Because of the necessity of limiting admission of full-time two-year applicants, the Divinity School does not accept transfer students from other institutions.

No credits are allowed for undergraduate courses. However, in approving plans of study leading to this degree, consideration will be given to earlier work taken in the fields of Biblical studies and Christian Education provided such courses were taken in the Junior and Senior years in accredited four-year colleges. Also where candidates for the degree have been engaged professionally as Directors of Christian Education for not less than twelve months prior to entering the Divinity School the amount of Field Work may, upon recommendation of the Director of the M.R.E. program and the approval of the Dean, be reduced to not less than six hours of Project or Directed Field Work during the period required for completing requirements for the degree.

A student who secures credit for 15 semester hours each semester will be in line for graduation at the end of two academic years. The amount of work allowed in each semester may not exceed that permitted in the B.D. curriculum.

COURSE REQUIREMENTS

(Not to include any courses numbered above 199, except in Biblical Studies.)

Not less than six semester hours of Divinity School work in Biblical Studies (including both Old and New Testaments) for all M.R.E. candidates, and up to twelve semester hours of such work for candidates adjudged to be insufficiently prepared in Biblical Studies.

Not less than nine nor more than fifteen semester hours in the field of Christian Education, to be distributed as follows: not less than six nor more than twelve semester hours in courses in the practical aspects of Christian Education, and not less than three in the psychological and philosophical aspects of Christian Education.

Not less than four nor more than seven semester hours, taken in two fields, chosen from the offerings in Christian Theology, Christian Ethics, and American Religious Thought.

Not less than four nor more than seven semester hours, taken in two fields, chosen from the offerings in Church History, Historical Theology, and Philosophy of Religion.

Not less than four nor more than five semester hours, taken in two fields, chosen from the offerings in Missions, Church Administration, and Pastoral Care.

Not less than two nor more than three semester hours, taken in one field, chosen from the offerings in Speech, Public Worship, and Church Music.

Project or Directed Field Work: Not less than six nor more than twelve semester hours.

Free electives in sufficient amount to complete sixty hours for graduation will be taken, if necessary.

Senior Seminars: The Senior Seminars of the B.D. curriculum are open to M.R.E. candidates only in the second year, by special permission of the Dean.

Conduct and Ministerial Acceptability

All students are admitted subject to the rules of the University and of the Divinity School, and continuance in the School is conditioned upon the observance of such rules.

The University expects of its students loyal and hearty cooperation in maintaining high standards of conduct as well as of scholarship. The University, therefore, reserves the right, and matriculation by the student is a concession of this right, to compel the withdrawal of any student whose conduct at any time is not satisfactory to the University, even though no specific charge is made against the student.

Divinity School students whose progress and development show that they are not suited to the work of the ministry will not be permitted to continue in the School.

Courses of Instruction*



REQUIRED courses, Limited-Electives, and Senior Seminars are numbered from 11 to 99. Elective courses carrying credit in the Divinity School only are numbered from 101 to 199. Courses approved for credit in both the Divinity School and the Graduate School of Arts and Sciences are numbered above 200. Lists of courses to be offered in any semester will be available at the time of each registration.

I. Biblical Studies

OLD TESTAMENT

11. INTRODUCTION TO THE OLD TESTAMENT I.—The origin, literary forms, and contents of the books of the Old Testament in their geographical and historical setting to the Exile. 3 s.h. Mr. STINESPRING

12. INTRODUCTION TO THE OLD TESTAMENT II.—The Post-Exilic period with special reference to Psalms, wisdom literature, and the problem of theodicy. 3 s.h. Mr. BROWNLEE

101. POST-EXILIC PROPHECY.—A study of the Post-Exilic prophets from Ezekiel to Daniel, with special reference to Messianic prophecy. 2 s.h. Mr. BROWNLEE

196. THE BIBLE AND RECENT DISCOVERIES.—A survey of the contribution of the cultural setting of the Bible as an aid to its understanding. Illustrated with archaeological slides. 3 s.h. Mr. BROWNLEE

197. CULTURAL HISTORY OF PALESTINE.—A study of significant contributions to civilization made in ancient, medieval, and modern Palestine with special reference to the three religions, Judaism, Christianity, and Islam. 3 s.h. Mr. STINESPRING

201-202. FIRST HEBREW.—The principles and structure of the Hebrew language with translation of selected Old Testament narratives. 6 s.h. Mr. STINESPRING

207. SECOND HEBREW.—II Samuel the first semester. 3 s.h. Mr. STINESPRING OR Mr. BROWNLEE

208. SECOND HEBREW.—The Qumran Isaiah Scroll the second semester. 3 s.h. Mr. BROWNLEE

301. THE RELIGIOUS THOUGHT OF POST-EXILIC JUDAISM.—A study of the development of religious ideas in Post-Exilic Judaism. Prerequisite: O.T. 11. 3 s.h. Mr. BROWNLEE

304. ARAMAIC.—A study of the Aramaic portions of the Old Testament, and selected passages from the Targums, Midrashes, and Talmuds. 3 s.h. Mr. STINESPRING OR Mr. BROWNLEE

* On approval of the Dean, courses offered in the Graduate School of Arts and Sciences other than those approved for credit in the Divinity School may be approved for credit in individual cases, provided no equivalent course is offered in the Divinity School; each case to be decided on its merits.

305. THIRD HEBREW.—A study of late Hebrew prose, with readings from Chronicles, Ecclesiastes, and the Mishnah. 3 s.h. Mr. STINESPRING

306. ADVANCED HEBREW.—A course on the Dead Sea Scrolls. 3 s.h. Mr. BROWNLEE

307. SYRIAC.—A study of the script and grammar, with readings from the Syriac New Testament and other early Christian documents. Some knowledge of Hebrew and Aramaic prerequisite. 3 s.h. Mr. STINESPRING

309. HISTORY OF THE ANCIENT NEAR EAST.—A specialized study of the civilizations of Egypt, Palestine, Syria, and Mesopotamia in the light of Biblical archaeology. 3 s.h. Mr. STINESPRING

310. OLD TESTAMENT PROPHECY.—The prophetic movement in Israel with special emphasis on the prophets of the eighth century B.C. Prerequisite: O.T. 11 and O. T. 12. 3 s.h. Mr. STINESPRING

SEE ALSO Pr. 183.

*HISTORY OF ART 215. RELIGIOUS ART OF THE ANCIENT NEAR EAST.—The development of art, particularly architecture and sculpture, as the material expression of religious ideas in Egypt, Mesopotamia, and in part Syria and Palestine to the Persian conquest. 3 s.h. Mr. MARKMAN

*HISTORY OF ART 216. RELIGIOUS ART OF THE CLASSICAL WORLD.—The religious art, particularly architecture and sculpture, of Greece and Rome with special emphasis on the monuments in the Near East. 3 s.h. Mr. MARKMAN

NEW TESTAMENT

18. EARLY CHRISTIAN LIFE AND LITERATURE.—A basic study of the civilization in which Christianity began; the origin and development of the Christian Church and its literature through the second century. 3 s.h. Mr. CLARK

19. INTRODUCTION TO NEW TESTAMENT THEOLOGY.—A constructive analysis and exposition of the positive doctrinal content of the New Testament. Prerequisite: N. T. 18. 3 s.h. Mr. ANDERSON

103-104. HELLENISTIC GREEK.—Designed for beginners to enable them to read the Greek New Testament. 6 s.h. Mr. BROWN

105. LIFE OF PAUL.—A study of Paul's life on the basis of Acts and the letters of Paul, emphasizing the permanent values in Paul's work and his contribution to the world. 3 s.h. Mr. MYERS

109. HISTORY OF THE ENGLISH BIBLE.—A general study of the history of the English version with comparison and evaluation of the numerous contemporary translations. This development will be illustrated from the Divinity School Bible collection, with access to and examination of the original editions. 3 s.h. Mr. CLARK

116. LIVING ISSUES OF NEW TESTAMENT THEOLOGY.—2 s.h. Mr. ANDERSON

217. THE NEW TESTAMENT IN GREEK.—Extensive reading of the Greek text of the New Testament, with special emphasis upon its interpretation. Prerequisite: six semester hours' study of the Greek language. 3 s.h. Mr. CLARK

218. GALATIANS AND I CORINTHIANS.—A detailed study of two of Paul's major epistles, based on the Greek text. Prerequisite: six semester hours' study of the Greek language. Alternate priority. 3 s.h. Mr. ANDERSON

220. I PETER AND THE GOSPEL OF JOHN.—A detailed study of two of the non-Pauline writings of the New Testament. The course will be based on the Greek text. Prerequisite: six semester hours' study of the Greek language. Alternate priority. 3 s.h. Mr. ANDERSON

* Course offered in the Graduate School of Arts and Sciences which is credited toward the degree of Bachelor of Divinity.

311. THE LIFE AND TEACHINGS OF JESUS.—A study of the events and sayings of the historical Jesus, in the light of His mission. 3 s.h. MR. CLARK

312. ADVANCED NEW TESTAMENT THEOLOGY.—An examination of the central aspects of New Testament Theology. Prerequisite: N.T. 19. 3 s.h. MR. ANDERSON

313. APOSTOLIC FATHERS.—A study of the Christian development from Clement of Rome to Polycarp (90-155 A.D.), with readings in the Greek text. 3 s.h. MR. CLARK

314. PATRISTIC THOUGHT.—A study of the development of early Christian doctrine to the period of Irenaeus. Prerequisite: N.T. 19. 3 s.h. MR. ANDERSON

316. HELLENISTIC RELIGIONS.—A study of the Gentile religions in the Roman Empire, at the beginning of the Christian era. Prerequisite: N.T. 18. 3 s.h. MR. CLARK

317. THE SYNOPTIC GOSPELS.—A detailed study of their characteristics and contents, based upon the Greek text, with attention to their respective sources and to the development of synoptic criticism. Prerequisite: Six semester hours' study of the Greek language. 3 s.h. MR. CLARK

318. TEXTUAL CRITICISM OF THE NEW TESTAMENT.—A study of the scientific recovery of the Greek text on which modern versions are based; manuscript discoveries; principles of textual criticism; practice in collating original manuscripts in the Duke collection. Prerequisite: N.T. 103-104, or its equivalent. 3 s.h. MR. CLARK

319. JUDAISM AND EARLY CHRISTIANITY.—3 s.h. MR. ANDERSON
SEE ALSO Pr. 184 and 186.

*GREEK 257.—The social and cultural history of the Hellenistic world from Alexander to Augustus. 3 s.h. MR. ROGERS

*LATIN 258.—The social and cultural history of the Graeco-Roman world. 3 s.h. MR. ROGERS

II. Historical Studies

HISTORY OF RELIGION AND MISSIONS

24. PHILOSOPHY OF THE CHRISTIAN WORLD MISSION.—A study of theological foundations, guiding principles, and contemporary problems of the World Christian Community. 2 s.h. MR. LACY

126. MISSIONARY EDUCATION IN THE CHURCH.—Practical programs for Church School, audio-visual aids, preaching, stewardship, and special projects. 2 s.h. MR. LACY

133. HISTORY OF CHRISTIAN MISSIONS.—A survey of the spread of Christianity with special emphasis on 19th and 20th century Protestantism. 2 s.h. MR. LACY

135. AREA STUDIES OF THE CHRISTIAN CHURCH.—The cultural setting and current programs and policies of the Church in one of the following areas: a. Latin America, b. India and Pakistan, c. Africa, d. Southeast Asia, e. Japan-Korea-Philippines, f. Moslem Lands, or g. United States Home Missions. (The area of study to be determined by student interest in consultation with the instructor.) 2 s.h. MR. LACY

156. FOUNDATIONS OF THE ECUMENICAL MOVEMENT.—The historical, theological and organizational background of Church unity and disunity, with an analysis of contemporary structures and development. 3 s.h. MR. LACY

* Course offered in the Graduate School of Arts and Sciences which is credited toward the degree of Bachelor of Divinity.

159. RELIGIONS OF INDIA.—Historical and theological introduction to Indian religious life and thought. The development of Buddhism is covered, as well as Jainism and Sikhism, along with the various modes of Hinduism. 3 s.h. MR. FOSTER

179. RELIGIONS OF THE FAR EAST AND THE NEAR EAST. Historical and theological introduction to the major indigenous traditions of China and Japan, as well as to Zoroastrianism, Islam, and Judaism. 3 s.h. MR. FOSTER

CHURCH HISTORY

13. HISTORY OF THE CHURCH THROUGH THE PROTESTANT REFORMATION.—A survey through the sixteenth century in terms of spiritual genius, organizational development, great literature, and representative movements. 4 s.h. MR. PETRY

14. HISTORY OF THE MODERN CHURCH.—A survey of the main currents in post-reformation and modern church history. 2 s.h. MR. SCHAFER

136. PRE-REFORMATION PREACHING.—Sermons, handbooks, and other historical sources studied in relation to Biblical preaching and the liturgical church, the problem of popular ministry and the issues of Christian reform. Prerequisite: C.H. 13. 2 s.h. MR. PETRY

137. RELIGIOUS LEADERS IN CHRISTIAN HISTORY.—Representative leaders in the early and medieval church studied in relation to contemporary churchmanship. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

138. GREAT BOOKS IN CHRISTIAN HISTORY.—An intensive study of Augustine's *Confessions*, Thomas à Kempis' *Imitation of Christ*, Erasmus's *Complaint of Peace*, Luther's *Christian Liberty*, Calvin's *Instruction in Faith*, and Andrewes' *Private Devotions*. 3 s.h. MR. PETRY

139. METHODISM.—A study of Methodist societies in England and the developing church in America as they gave rise to such historic issues as polity, education, division, and reunion. Prerequisite: C.H. 13. 2 s.h. MR. PETRY

330. THE CHURCH IN EUROPE SINCE 1800.—Emphasis is placed on the relation of the church to the social, economic, and political life of Modern Europe. Particular attention is given to Papal pronouncements on social issues, the relationship of Eastern to Western institutions, and ecclesiastical historiography as it involves source editions, periodicals, and ecumenical literature. 3 s.h. MR. PETRY

331. THE SOCIAL MESSAGE OF THE EARLY AND MEDIEVAL CHURCH.—A study of the social teachings and contributions of the Christian church prior to the Protestant Reformation. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

332. THE MEDIEVAL CHURCH.—Outstanding characteristics of the medieval church, emphasizing theory, polity, institutions, sacraments, and worship. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

334. CHURCH REFORMERS AND CHRISTIAN UNITY.—The work of such reformers as Marsilius of Padua, William of Ockham, Jean Gerson, Pierre d'Ailly and Nicholas of Cusa in relation to ecclesiastical schism and the search for Christian unity through representative councils. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

336. CHRISTIAN MYSTICISM IN THE MIDDLE AGES.—Source studies, in historical perspective, of such late medieval mystics as Bernard of Clairvaux, the Victorines, Ramon Lull, Meister Eckhart, Richard Rolle, Catherine of Siena, and Nicholas of Cusa. Prerequisite: C.H. 13. 3 s.h. MR. PETRY

HISTORICAL THEOLOGY

21. INTRODUCTION TO THE HISTORY OF CHRISTIAN DOCTRINE.—Formative periods of doctrine and controversy illustrating the nature and content of historical theology. 2 s.h. MR. SCHAFER

120. THE CREEDS OF CHRISTENDOM.—A historical and interpretative study of great Christian creeds and confessions. Prerequisite: C.T. 20. 3 s.h.

MR. SCHAFFER

129. SEMINAR IN HISTORICAL THEOLOGY.—Selected problems in the history of Christian theology. Prerequisite: H.T. 21. 3 s.h.

MR. SCHAFFER

198. THE HERITAGE OF THE REFORMATION.—The doctrine and practice of the Reformers studied for their contribution to the life and thought of the modern church. 3 s.h.

MR. SCHAFFER

323. HISTORY OF CHRISTIAN THOUGHT I.—A historical study of theology in the ancient and medieval church. Prerequisite: permission of instructor. 3 s.h.

MR. SCHAFFER

324. HISTORY OF CHRISTIAN THOUGHT II.—A historical study of theology from the Reformation. Prerequisite: permission of instructor. 3 s.h.

MR. SCHAFFER

AMERICAN RELIGIOUS THOUGHT

28. MOVEMENTS IN AMERICAN PROTESTANT THOUGHT.—A historical survey of the main currents in Protestant thought in America. 3 s.h.

MR. SMITH

199. THE AMERICAN SOCIAL GOSPEL.—A study of Protestant social thought and action in America since 1865. 3 s.h.

MR. SMITH

395. CHRISTIAN THOUGHT IN COLONIAL AMERICA.—Exposition of the main currents in Protestant Theology. 3 s.h.

MR. SMITH

396. CHRISTIAN THOUGHT IN NINETEENTH CENTURY AMERICA.—Comparative study of Orthodoxy and Liberalism. 3 s.h.

MR. SMITH

397. CONTEMPORARY AMERICAN THEOLOGY.—Critical appraisal of conflicting tendencies in American theological thought. 3 s.h.

MR. SMITH

370. SEMINAR: JONATHAN EDWARDS.—A critical analysis of Edwards' major theological works. 2 s.h.

MR. SMITH OR MR. SCHAFFER

371. SEMINAR: JOHN WESLEY.—A study of Wesley's basic Christian doctrines. 2 s.h.

MR. SMITH

372. SEMINAR: THEOLOGY OF PAUL TILLICH.—An examination of Tillich's philosophical theology. 2 s.h.

MR. SMITH OR MR. FOSTER

III. Theological Studies

PHILOSOPHY OF RELIGION

31. INTRODUCTION TO PHILOSOPHY OF RELIGION.—Basic historical orientation in religious thought, especially in Western Culture. 3 s.h.

MR. FOSTER

102. CHRISTIAN FAITH AND THE PROBLEM OF EVIL.—Analysis of the questions raised for faith by tragedy, suffering and/or evil, examination of answers proposed in Christian and philosophical literature. 2 s.h.

MR. FOSTER

110. CHRISTIAN FAITH AND MODERN SCIENCE.—Relations, tensions, and possible harmonizations of scientific methodology and modern scientific knowledge with the Christian Faith. 2 s.h.

MR. FOSTER

121. GOD AND THE WORLD.—An examination of the Christian doctrines of God and the creation in the context of the History of Religions and the History of Philosophy, with emphasis upon the contemporary scene. 3 s.h.

MR. FOSTER

CHRISTIAN THEOLOGY

20. INTRODUCTION TO CHRISTIAN THEOLOGY.—Contemporary theological tendencies, method and theory of knowledge, and introductory interpretation of the principal tenets of the Christian faith. 4 s.h.

MR. CUSHMAN

107. THE PERSON AND WORK OF CHRIST.—The problem of knowledge of Christ and formulation of a doctrine of his work and person in the light of Biblical eschatology. Prerequisite: C.T. 20. 3 s.h. Mr. CUSHMAN

108. THE CHRISTIAN DOCTRINE OF REVELATION AND AUTHORITY.—An intensive examination of the meaning, form and content of revelation, and its relation to the problem of authority. Prerequisite: C.T. 20. 3 s.h. Mr. FOSTER

224. CONCEPTIONS OF MAN IN WESTERN THOUGHT.—An analysis and interpretation of important types of philosophical and theological theory. 3 s.h. Mr. CUSHMAN

320. SEMINAR: FRIEDRICH SCHLEIERMACHER. Critical examination of the dogmatic system. Prerequisite: permission of instructor. 2 s.h. Mr. CUSHMAN

321. PLATONISM AND CHRISTIANITY.—An analysis of Plato's religious philosophy and a survey of its continuing influence in Hellenistic and Christian thought. Prerequisite: six semester hours in Theology. 3 s.h. Mr. CUSHMAN

322. NINETEENTH CENTURY EUROPEAN THEOLOGY.—Protestant theology from Kant to Herrmann together with representative British theologians. 3 s.h. Mr. CUSHMAN

325. PHILOSOPHICAL THEOLOGY I.—Main problems in the history of philosophical theology. Prerequisite: permission of instructor. 3 s.h. Mr. CUSHMAN

326. PHILOSOPHICAL THEOLOGY II.—Prolegomena to the system of Christian Theology. Prerequisite: C.T. 325. 3 s.h. Mr. CUSHMAN

328. SEMINAR IN TWENTIETH CENTURY EUROPEAN THEOLOGY.—Critical examination of the thought of selected representative theologians. Prerequisite: permission of instructor. 2 s.h. Mr. CUSHMAN

SEE ALSO NEW TESTAMENT 312.—ADVANCED NEW TESTAMENT THEOLOGY.

CHRISTIAN ETHICS

27. CHRISTIAN ETHICS I.—The central assumptions and principles of the Christian conception of the good life. 3 s.h. Mr. BEACH

114. CHRISTIAN ETHICS II.—A consideration of special problems involved in the application of Christian ethics in modern society. Prerequisite: C.E. 27. 2 s.h. Mr. BEACH

190. THE CHRISTIAN CRITIQUE OF COMMUNISM.—Analysis of and alternatives to the dynamic secular ideology from a religious standpoint. 3 s.h. Mr. LACY

192. CHRISTIANITY AND INTERNATIONAL RELATIONS.—An application of Christian Ethics to world problems. 3 s.h. Mr. LACY

194. INTRODUCTION TO CHRISTIAN SOCIAL ETHICS.—Christian norms for social policy and their application to the domestic, economic, political, and racial patterns of modern culture. 3 s.h. Mr. LACY

387. CHRISTIAN ETHICS AND SOCIAL PHILOSOPHY.—Selected social philosophies from Locke to Sumner, analyzed from the standpoint of Christian ethics. Prerequisite: C.E. 27. 3 s.h. Mr. LACY

389. CHRISTIAN ETHICS AND CONTEMPORARY CULTURE.—A study of the interaction between Christian thought and current secular social theory. Prerequisite: C.E. 27 or its equivalent. 3 s.h. Mr. BEACH

390. CURRENT PROBLEMS IN CHRISTIAN ETHICAL THEORY.—A critical study, seminar style, of dominant issues in Christian Ethics, through an analysis of a variety of contemporary Christian treatments of such problems as love, justice, community and vocation. Prerequisite: C.E. 27 or its equivalent. 3 s.h. Mr. BEACH

391. HISTORICAL TYPES OF CHRISTIAN ETHICS I.—A critical study of representative statements of Christian ethical theory, through the early Reformation. Prerequisite: C.E. 27 or its equivalent. 3 s.h. MR. BEACH

392. HISTORICAL TYPES OF CHRISTIAN ETHICS II.—A continuation of C.E. 391, from the Reformation through current Christian ethical theory. Prerequisite: C.E. 391. 3 s.h. MR. BEACH

393. THE CHRISTIAN INTERPRETATION OF HISTORY.—A comparative examination of the chief secular and Christian theories of history current in Western thought. For advanced students. Prerequisite: C.E. 27. 3 s.h. MR. BEACH

394. CHRISTIANITY AND THE STATE.—The relation of the Christian theory of the State to political problems with special consideration of the religious assumptions underlying democratic theory and practice, and of the relationship of church to state. Prerequisite: C.E. 27. 3 s.h. MR. BEACH

IV. Practical Studies

CHURCH ADMINISTRATION

23. CHURCH ADMINISTRATION I.—An introduction to the administrative and supervisory procedure essential in the total work of the church. 2 s.h. MR. WALTON

141. CHURCH ARCHITECTURE AND BUILDING—A study of church architecture in relation to the total program of the church of today. 2 s.h. MR. WALTON

142. FIELD WORK I—GENERAL.—A course designed to help with personal and parish problems, and the techniques of successful service. 1 s.h. (Note: All students working under or assisted by the Duke Endowment or by Divinity School funds are required to take this course, or 144, Field Work II, or 145, Field Work III.) MR. WALTON

144. FIELD WORK II—RURAL.—This course is designed to prepare students for work in rural churches. It emphasizes the training values in field work. 1 s.h. MR. WALTON

145. FIELD WORK III—URBAN.—This course is designed to prepare students for work in urban churches. It is planned to help the student fit into the urban situation and to gain the most from his field work. 1 s.h. MR. QUEEN

146. CHURCH ADMINISTRATION II.—This course considers the principles of program planning, policy development, and leadership enlistment and training in the church. 3 s.h. MR. WALTON

147. THE URBAN COMMUNITY.—The urban environment viewed in relation to the people, institutions, organizational structure and constitutive forces giving rise to urbanism as a way of life. 2 s.h. MR. REGEN

148. CHURCH FINANCE.—A seminar to consider the principles of budget making, stewardship instruction, and every member enlistment in church support. 2 s.h. MR. WALTON

149. PARISH AND COMMUNITY RESEARCH AND ANALYSIS.—A seminar to consider the techniques of community surveys, research, and analysis. Attention is given to the use of research data in program planning and in checking on the effectiveness of church work. 2 s.h. MR. WALTON

150. THE RURAL PASTOR AND HIS WORK.—A study of the qualifications of the rural pastor and his task. Attention is given to the supervisory methods and material available for the pastor's use and to the current trends in rural life and their influence upon church work. 3 s.h. MR. WALTON

151. THE RURAL CHURCH.—A study of rural conditions and the place of the church as a community institution and the problems and situations met in local church management and supervision. 3 s.h. MR. WALTON

152. PARISH EVANGELISM.—A study seeking to prepare the student to plan a comprehensive and continuous program of evangelism for the local church. 2 s.h.

MR. QUEEN

153. AUDIO-VISUAL AIDS.—The principles and methods of audio-visual aids in the program of the church. 2 s.h.

MR. WALTON AND OTHERS

154. THE URBAN CHURCH.—A consideration of the function, nature, program, and administration of the effective city church and of the urban minister's distinctive task. 2 s.h.

MR. REGEN

155. CHURCH POLITY: COMPARATIVE AND DENOMINATIONAL.—This is a study of the polity of the different denominations in which the students may serve, based upon the disciplines and practices of the respective denominations. 2 s.h.

MR. QUEEN, MR. REGEN AND OTHERS

(The plan of this course is for the class to meet as a unit one hour a week for the study of the common interests of the denominations; for the other hour the class is divided into groups on the following plan:

a. THE POLITY OF THE METHODIST CHURCH.—The study will be based upon the Methodist Discipline.

MR. QUEEN

b. THE POLITY OF THE BAPTIST CHURCHES.

c. THE POLITY OF THE CONGREGATIONAL-CHRISTIAN CHURCHES.

d. THE POLITY OF THE PRESBYTERIAN CHURCHES.

MR. REGEN

(Courses in the polity of other churches will be arranged as needed.)

157. GROUP WORK.—The principles and skills required in group work as they apply to discussion groups, forums, panels, guided neighborhood conversation groups, social work, community organization and action. 2 s.h.

MR. WALTON AND OTHERS

FIELD WORK CREDIT.—Granted on written recommendation of the Director of Field Work upon the completion of satisfactory work in C.A. 23, the completion of Field Work Seminar, 142, 144, or 145, and the performance of successful field work. 1 s.h. (Available only in the senior year.)

CHRISTIAN EDUCATION

22. PHILOSOPHY OF CHRISTIAN EDUCATION.—A basic study of the implications of theology and of educational theory for a philosophy of Christian education. 3 s.h.

MR. RICHEY

25. EDUCATIONAL THEORY AND PRACTICE IN THE CHURCH.—An over-all and introductory view of the educational functions of the church. Consideration is given to the work of organization, administration and supervision of the church school. 2 s.h.

MR. KALE

125. THEOLOGICAL AND PSYCHOLOGICAL INTERPRETATIONS OF MAN.—An inquiry into the relations of theological and psychological views of man's nature, predicament, and deliverance. 3 s.h.

MR. RICHEY

129. CHRISTIAN GROWTH OF PERSONS.—Psychological foundations of Christian nurture of children and youth. 2 s.h.

MR. RICHEY

131. PSYCHOLOGY OF RELIGION.—A study of psychological aspects of the religious life. 2 s.h.

MR. RICHEY

158. CHRISTIAN EDUCATION AND THE COMMUNITY.—A study of the principles, practices, methods and materials of Christian Education as related to the total community life. 3 s.h.

MR. KALE

159. CHRISTIAN FAITH AND HIGHER EDUCATION.—An examination of current philosophies of religion in higher education, with reference to student religious work and college teaching of religion. 2 s.h.

MR. RICHEY

160. EVANGELISM IN THE CHURCH SCHOOL.—A study of the place of evangelism in the work of the church school. 2 s.h.

MR. KALE

161. THEORIES, TYPES AND TECHNIQUES OF TEACHING.—A study of the main principles underlying religious teaching with an examination of the different methods of teaching. 3 s.h. Mr. KALE

162. METHODS AND MATERIALS OF CHRISTIAN EDUCATION.—A consideration of the principal administrative problems of the church school, of the various concepts of the curriculum, and an examination of existing curricula, their nature, use and value. 3 s.h. Mr. KALE

163. WORSHIP AND DRAMA.—Worship in its bearings upon the educational functions of the Christian religion. The use of drama in Christian education with the creation of dramatic programs of worship and drama writing and production. 3 s.h. Mr. KALE

164. CHRISTIAN EDUCATION OF CHILDREN.—The organization and administration of the work of the church with children of the nursery, kindergarten, primary and junior age groups. 2 s.h. Mr. KALE

165. CHRISTIAN EDUCATION OF YOUTH.—The organization and administration of the youth program in the local church. 2 s.h. Mr. KALE

166. CHRISTIAN EDUCATION OF ADULTS.—A study of the needs of adults; the materials, methods, and principles of organization for the Christian education of adults. 2 s.h. Mr. KALE

167. THEOLOGY AND THE LAY MIND.—Formulation and communication of the Christian faith, for the mind of today. (For Middlers and Seniors.) 3 s.h. Mr. RICHEY

169. THEORIES OF CHRISTIAN EDUCATION.—A critical investigation of current theories of Christian education. 3 s.h. Mr. RICHEY

SEE ALSO: H.R. 126.

PASTORAL CARE

26. INTRODUCTION TO PASTORAL CARE.—A study of the background, needs and methods of pastoral work and personal counseling. 2 s.h. Mr. DICKS

170. SEMINAR IN PASTORAL CARE.—For students preparing for full-time pastoral ministry, hospital chaplaincy, industrial chaplaincy, ministry to older people, or work with young people. Practicum. Prerequisite: P.C. 26 or consent of instructor. 2 s.h. class and 1 s.h. clinic. Mr. DICKS

171. PASTORAL CARE PRACTICUM I.—A study of pastoral calls and interviews. Particularly for students serving churches or working in clinical situations. Prerequisite: P.C. 26 or consent of instructor. 2 s.h. class and 1 s.h. clinic. Mr. DICKS

172. PASTORAL CARE PRACTICUM II.—Advanced pastoral care for students serving churches or working in clinical situations. Prerequisite: P.C. 26 or P.C. 171. 3 s.h. Mr. DICKS

173. RELIGION AND HEALTH.—The study of the relation of body and mind and of the religious resources for health through counseling and worship. Prerequisite: P.C. 26 or consent of instructor. 2 s.h. Mr. DICKS

174. PERSONAL COUNSELING.—A study of formal personal counseling for those going into the ministry, religious education, and work with college students. 2 s.h. [Open to a limited number of first-year students.] Mr. DICKS

176. PASTORAL CARE AND SOCIAL WORK.—Lectures by various specialists and visits to social agencies to orient the minister in relation to other specialists working with individuals and to familiarize him with social service resources. 2 s.h. [Open to a limited number of first-year students.] Mr. DICKS

177. ADVANCED SEMINAR IN PASTORAL CARE.—Continuation of 170, which, however, is not a prerequisite. Emphasis upon hospital ministry. Practicum. Prerequisite: P.C. 26 or consent of instructor. 2 s.h. class and 1 s.h. clinic. Mr. DICKS AND OTHERS

PREACHING

29-30. SERMON CONSTRUCTION—THEORY AND PRACTICE.—An investigation of the theory of preaching (first semester). Detailed work in practice preaching and a clinical session each week on the application of theory (second semester). 4 s.h. Mr. CLELAND, Mr. CARLTON AND Mr. HODGES

181. PRACTICAL PROBLEMS IN PREACHING.—Analysis of selected sermons and discussion of problems facing the preacher in the pulpit. Prerequisite: Pr. 29 and 30. 2 s.h. Mr. CLELAND AND Mr. CARLTON

183. EXPOSITORY PREACHING—OLD TESTAMENT.—The exegesis and exposition of selected Old Testament passages for homiletical purposes. 2 s.h. Mr. CLELAND

184. EXPOSITORY PREACHING—THE PAULINE EPISTLES.—A study for homiletical purposes of the religious experience and theology of Saint Paul and its influence on ethical theory and practice. 3 s.h. Mr. CLELAND

185. EXPOSITORY PREACHING—NON-BIBLICAL.—An evaluation of drama, poetry and fiction for homiletical purposes. 3 s.h. Mr. CLELAND

186. EXPOSITORY PREACHING—THE JOHANNINE WRITINGS.—The exegesis and exposition of the Gospel and the Epistle of John for homiletical purposes. 2 s.h. Mr. CARLTON

187. POST-REFORMATION PREACHING.—A study of the theological trends and significant personalities in the preaching tradition from the sixteenth century to the present. 2 s.h. Mr. CARLTON

SEE ALSO: C.H. 136.

WORSHIP

178. CORPORATE WORSHIP.—The theory and practice of the common worship of the Church, using various manuals of worship. One hour to be arranged. 3 s.h. Mr. RUDIN

180. CHURCH MUSIC I.—The evaluation and use of hymns with an introduction to the elements of musical notation and the rudiments of conducting. 2 s.h. Mr. YOUNG

189. CHURCH MUSIC II.—A study of the larger and more advanced forms of the Church's musical literature and the administrative problems encountered in maintaining a progressive program of music in the Church. 2 s.h. Mr. YOUNG

SPEECH

17. EFFECTIVE SPEAKING.—Fundamentals of preparation and delivery for effective communication. Offered in four sections. 2 s.h. Mr. RUDIN

132. PUBLIC SPEAKING.—Selected problems of preparation and delivery, based upon individual needs. For students deficient in speech and preaching, by recommendation of the instructors concerned. 2 s.h. Mr. RUDIN

134. LITURGICAL READING.—Practice in reading the liturgical materials of the pastoral ministry: Scriptures, prayers, and the rites and seasonal services in the Methodist *Book of Worship*. 2 s.h. Mr. RUDIN

V. Senior Seminars

In the third year each B.D. candidate will take one Senior Seminar, yielding 2 s.h. credit. No student may enroll in more than one Senior Seminar without special permission of the Dean. Senior Seminars will not yield Graduate School credit, nor be open to special students.

Enrollment in each Senior Seminar shall be normally not more than twelve. No Senior Seminar need be conducted for an enrollment of less than five students. Each Senior Seminar will be in charge of a Chairman. Not less than two instructors will participate in each Seminar. General supervision of all Senior Seminars will be exercised by a standing committee of the Faculty.

The work done in each Senior Seminar should be equivalent to that done in a normal 2 s.h. course, with reading based upon a prepared reading list and a substantial paper or written project report.

FIRST SEMESTER

- 61. THE CHRISTIAN FAITH AND ITS PROCLAMATION.—2 s.h.
MR. CUSHMAN, MR. RUDIN, MR. CARLTON
- 65. PRACTICAL VALUES OF BIBLICAL RESEARCH.—2 s.h.
MR. CLARK, MR. WALTON, MR. BROWNLEE
- 67. THE NEW TESTAMENT AS MATERIALS FOR TEACHING.—2 s.h.
MR. RICHEY, MR. ANDERSON
- 70. PASTORAL CARE AND PREACHING.—2 s.h. MR. DICKS, MR. CARLTON

SECOND SEMESTER

- 62. WESTERN CHRISTIANITY AND NON-CHRISTIAN FAITHS.—2 s.h.
MR. PETRY, MR. MYERS, MR. FOSTER
- 64. THE OLD TESTAMENT AS MATERIALS FOR TEACHING.—2 s.h.
MR. KALE, MR. STINESPRING, MR. ANDERSON
- 66. THE CHRISTIAN CHURCH AND SOCIAL CHANGE.—2 s.h.
MR. BEACH, MR. LACY, MR. SCHAFER

Not offered 1957-58.

- 63. THE ECUMENICAL MOVEMENT IN THE MODERN CHURCH.—2 s.h.
- 68. CHRISTIAN EXPERIENCE AND CONTEMPORARY LIFE.—2 s.h.
- 69. THE WORSHIPPING CHURCH.—2 s.h.

Cost, Residential Arrangement, and Student Aid



Fees and Cost

THE University tuition charge is \$325.00 per semester. Scholarships covering this amount are granted to all Divinity School students. Other charges are as follows:

Fees per semester:

General Fee	\$ 50.00
Approximate cost of meals per semester (estimated).....	200.00
Room per semester (double room).....	87.50
Total per semester.....	<u>\$337.50</u>

The "General Fee" is in lieu of all special charges, and includes the following fees: Matriculation, Medical, Library, Damage, Commencement, and Diploma. Divinity School students may secure admission to all regularly scheduled University athletic contests held on the University grounds during the entire academic year by payment of the athletic fee of \$10.00 per year plus any Federal taxes that may be imposed. This fee is payable in the fall semester.

A fee of \$1.00 will be charged for any student-initiated change in courses after the beginning of classes each semester.

LATE REGISTRATION

Students matriculating in either semester at a date later than that prescribed in the catalogue shall pay to the Treasurer of the University a penalty of \$5.00.

Living Accommodations

A description of dining facilities and living quarters is given in the *Bulletin of the Divinity School*.

Student Aid

Duke University remits its regular tuition charges to all students enrolled in the Divinity School. In recognition of this, students are expected to render occasional services such as the teaching of Church School classes and responding to calls for particular services. Financial aid, over and above this, is available only in the form of grants-in-aid and work scholarships. For details see the *Bulletin*.

THE SCHOOL OF LAW

Fall Semester begins September 17, 1957

Spring Semester begins January 27, 1958

The School: Its Purposes and Methods



BUILT on the foundation of the School of Law of Trinity College, with its history of legal instruction running back to the middle of the past century, the Duke University School of Law was established in 1924. In 1930 the School was moved into its present building, the Faculty and library were greatly increased, and the activities of the School broadened. The School of Law is a member of the Association of American Law Schools and is on the "Approved List" of the American Bar Association. Twenty-four states, one foreign country and sixty-three institutions of higher learning are represented in its student body.

The curriculum of the School of Law provides thorough preparation for the practice of law in any state; its graduates have been admitted to the bar in nearly every state and territory. Opportunities for specialization in particular branches of the law are afforded.

In carrying out the trust imposed by the indenture establishing the Duke Endowment, the School of Law seeks to have the student acquire knowledge and comprehension not only of legal doctrine, but also of the judicial process and of the social, economic, and political problems with which law and lawyers must deal. The method of instruction employed compels analysis of judicial opinions and inquiry into the non-legal as well as the legal considerations which underlie them. In appropriate courses, special consideration is given to the work of the legislative and administrative agencies of government. In recognition of the increasing importance of the role of the lawyer in representing private interests before government agencies and in government service, a broad program is offered in the public law field. Scope for creative student work is provided by seminar courses and supervised individual study and research.

Practical training is not left for the first years of practice. A carefully integrated series of courses is designed to give students actual experience in the work of lawyers. Legal research and writing courses and moot court work in the first and second years are followed in the third by seminar courses emphasizing legal planning and drafting and by practice courses and work in the Legal Aid Clinic. A student bar association affords a means whereby the student may gain acquaintance with the professional organizations through which a lawyer may and should contribute to the well-being of his profession and of society.

For details of the program of study see Program of Instruction, page 301. The separate courses are described on pages 303 through 308

Admission, Registration, and Fees



Admission

DIRECTIONS TO APPLICANTS FOR ADMISSION

APPPLICATION must be made on the prescribed Law School application blank which will be sent upon request. No application can be finally passed upon until all required documents are on file. These documents are: (1) the application itself, to which a recently made personal photograph should be attached; (2) a complete transcript of record and evidence of graduation or right to honorable withdrawal from the institution from which credit is offered; (3) a report of the applicant's score on the Law School Admission Test described below; (4) letters from an official of the college attended and from three or more responsible persons who are acquainted with the applicant's character and general qualifications. These letters will be requested by the Law School, and the applicant need only furnish the names and addresses of persons from whom the desired information can be obtained.

The Law School seeks to select students who give promise of leadership in some of the various phases of professional activity. Applicants for admission and their sponsors are requested to keep this fact in mind.

The Law School Admission Test, referred to above, is administered by the Educational Testing Service and is participated in by a number of the leading law schools of the country. It is given four times a year at examination centers conveniently located throughout the United States. No special preparation for the test is necessary, since it is designed to measure aptitudes rather than knowledge of subject matter. The applicant's score on the test will be considered along with other data in passing upon his admission to the Law School. Application forms and information concerning the test should be procured by writing directly to the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

TIMES OF ADMISSION

Beginning students may enter only at the opening of the Fall semester in any year. Students who have completed the first year of law study at this or any other law school approved by the Association of American Law Schools may enter at the beginning of any semester

REQUIREMENTS FOR ADMISSION

An application for admission as a candidate for the degree of Bachelor of Laws may be submitted by any person (1) who is a graduate of a college of approved standing, or (2) who has completed in a college of approved standing work equivalent in number of units to three-fourths of that required for graduation and whose college work in its entirety shows an average grade equal to that required for graduation, the requirement in each case being determined by the regulations of the college where the work was taken.

COMBINED COURSE

A number of colleges, upon application by their students, have permitted those who have completed three years of undergraduate work to enter the Law School of Duke University and upon the satisfactory completion of the first year of law school work to receive their Bachelor of Arts degree from such colleges. It is suggested that students desiring to enter Duke University School of Law make inquiry of their proper college authorities regarding this point.

A student from an undergraduate college of Duke University who has completed therein three years of study may apply to that college to enroll in a combined course wherein his first year of law study may be accepted toward the Bachelor of Arts degree, and, upon the completion of four additional semesters of law study, he will receive the Bachelor of Laws degree.

ADMISSION TO ADVANCED STANDING

Any person who has complied with the requirements for admission set forth in this announcement prior to the commencement of his law study, who presents evidence of the satisfactory completion of at least one year of study at any law school which is a member of the Association of American Law Schools, and who is eligible for readmission to the law school from which he proposes to transfer, may be admitted to advanced standing, subject to such rules as would be applicable to students in this School having a comparable scholastic record. Provisional credit for courses so completed will be given, final credit being conditioned on the completion of at least one full year of law study in this School with an average at least five points above the passing grade. Adjustment of credit for work done in such other law schools may be made by the Dean or by vote of the Faculty.

CANDIDATES FOR GRADUATE DEGREES

Applications for admission to graduate study should be addressed to the Dean of the Law School and should include transcripts of records of legal and pre-legal work. For the requirements for the graduate degrees, see page 298.

Registration

Registration is conducted in the Law Building. All students, both old and new, are required to register at the beginning of each semester, at which time class schedules and course cards must be filled out and approved. Students who register in any semester at a date later than that prescribed are required to pay to the Treasurer of the University a penalty of \$5.00 for late registration unless excused therefrom. A student's registration for any semester is not complete until he has paid the tuition and fees for that semester. The \$5.00 penalty for late registration will be imposed, therefore, unless the student has paid his tuition and fees by registration day.

REGISTRATION FOR BAR EXAMINATION

Many states now require that a student, prior to or shortly after beginning the study of law, register with the board of bar examiners of the state if he intends to practice therein. Each student should write to the secretary of the board of bar examiners of the state in which he plans to practice and ascertain if that state makes this requirement.

CONDUCT OF STUDENTS

All students are admitted subject to the rules of the University and of the School of Law, and continuance in the School is conditioned upon the observance of such rules.

The University expects of its students loyal and hearty co-operation in developing and maintaining high standards of conduct as well as of scholarship. The University, therefore, reserves the right, and matriculation by the student is a concession of this right, to compel the withdrawal of any student whose conduct at any time is not satisfactory to the University.

Fees and Expenses

Tuition fees are due at the beginning of each semester. The tuition fee is \$225.00 a semester. In addition, a general fee of \$50.00 per semester is required in lieu of separate fees for matriculation, medical service, and the like.

The admission of an applicant is not final until he deposits the sum of \$25.00 with the Treasurer of the University. This deposit will not be returned. It will be credited to the account of the student or, if the student is entitled to the benefits of the Servicemen's Readjustment Act or the Vocational Rehabilitation Act, it will be refunded upon his matriculation.

Law students may secure admission to all regularly scheduled University athletic contests held on the University grounds during the

entire academic year by payment of the athletic fee of \$10.00 per year plus any Federal taxes that may be imposed. This fee is payable in the fall semester.

The payment of the general fee entitles the student to full medical and surgical care, with the exceptions noted below. This service is under the direction of the University Physician with the co-operation of the staff of Duke Hospital. It includes hospitalization, medical and surgical care, drugs, dressings, X-ray studies, and ward nursing. A charge for board is made at the same rate as in the University dining halls. Refraction of eyes, treatment of teeth and of all chronic conditions, such as the removal of diseased tonsils, are not included in this service. The cost of any necessary braces and orthopedic appliances, as well as of special nursing, must be borne by the student.

Due to rising costs it may be necessary to consider some readjustment of charges. In the event of an adjustment applicants will be notified.

SCHOLARSHIPS AND LOAN FUNDS

Scholarships covering tuition (\$450) are available to a limited number of first-year students, graduates of approved American universities and colleges, who are in need of such assistance. Applicants must have made excellent records in their college work and must show unusual promise of success in the study of law. In cases of exceptional merit, larger scholarships amounting to as much as \$850 may be awarded.

In addition to the general scholarship fund, five regional scholarships of \$1,000 each for applicants from North Carolina and South Carolina have been made available. Such scholarships will be awarded annually on a competitive basis to the residents of the states of North Carolina and South Carolina who qualify as entering law students. Such scholarships are renewable for a maximum period of three years on the condition that the holder maintain a scholastic average of "B" or higher in the School of Law. The total amount awarded to the recipient who qualifies for the maximum period is \$3,000. Details concerning these scholarship awards will be furnished upon request.

Applications for scholarships should be submitted to the Dean of the Law School, together with a transcript of college work and letters of recommendation from responsible persons, certifying to the character and fitness of the applicant.

Scholarship assistance will be continued as to second- and third-year students maintaining a high standard of work. The average cost of a year at Duke is approximately \$1500, which includes tuition, general fees, board, room and books. There are also a number of positions as assistants in the Law Library and as research assistants which are open to students, particularly in their second or third year, who do not receive other aids from the University.

A statement relative to scholarships, fellowships, and loan funds appears in the *Bulletin of the School of Law*. A description of dining facilities and living quarters is also given in this bulletin.

LAWS REGARDING PAYMENTS

The Executive Committee of Duke University has enacted the following regulations which govern the payment of all fees due the University:

1. The President and the Treasurer of the University have no authority to suspend or in any way alter these regulations.

2. Any student who has failed to pay his bills on the dates advertised in the catalogue is denied the right to attend classes until his account is settled in full; subsequent withdrawal does not entitle a student to a refund.

3. No student is considered by the Faculty as an applicant for graduation until he has settled with the Treasurer for all his indebtedness to the University.

4. No student who has not settled all his bills with the Treasurer of the University is allowed to stand the midyear or final examinations of the academic year.

When a student wishes his bills sent to his parents or guardian, the student or his parent or guardian must so notify the Treasurer of the University in writing in due time, but this in no way releases the student from liability to established penalties, if his bills are not paid on the dates advertised.

Bachelor of Laws Degree



UPON favorable recommendation of the Faculty, the degree of Bachelor of Laws will be conferred on students who shall have successfully completed six semesters' study of law, the last two semesters of work immediately preceding the granting of such degree having been completed in this School.

A student shall be deemed to have completed successfully six semesters' study of law if during this period he has

(1) secured a passing grade in courses aggregating seventy-eight semester hours;

(2) secured in every required course a grade not requiring repetition thereof; and

(3) secured a weighted average at least five points above passing in all work taken other than first-year courses, or, if the grade in such work is lower than that above specified, an average grade of five points above passing in all work taken.

Students who have spent only their last two semesters of study in residence in this School must have received a weighted average at least five points above passing for that year.

MINIMUM AND MAXIMUM STUDENT LOADS

No regular student is permitted to take less than ten course hours per semester. No first-year student is permitted to take courses in excess of the first-year program.

Second- and third-year students are not permitted to take for credit more than fifteen course hours per semester; nor to audit and take for credit more than sixteen course hours per semester. In exceptional cases, students may petition the Faculty for permission to take more or less than the prescribed maximum or minimum loads.

ATTENDANCE

Regular class attendance is required. The right to take the examinations, as well as the privilege of continuing one's membership in the School at any time, is conditioned upon regular attendance at the exercises of the School.

STANDARDS OF SCHOLARSHIP

GRADES.—The final grades in each course are given in numerical terms which are equivalent to letter grades according to the following scale: 80 to 100, A; 70-79, B; 55-69, C; 50-54, D; 0-49, F.

A grade of 50 is necessary for passing a course. Where a grade below 50 is given a student in any required course, the course must be repeated if the instructor reports the grade with the notation "must repeat." When a student is required by the instructor to repeat a course which he has failed, the grade given after such repetition supersedes the previous grade in the course.

ELIGIBILITY TO CONTINUE LAW STUDY.—Any student who at the end of his first year or at the end of any subsequent semester, has an average grade lower than 50 on all the work then taken is ineligible to continue his work in the School. Any other student (1) whose average final grade at the end of his first semester is below 50, or (2) whose average grade at the end of any subsequent semester on all the work then taken is below 55, or (3) who in any single semester or in any single year receives failure grades in courses totaling eight or more semester hours, may at any time be declared by the Dean ineligible to continue.

NOTIFICATION OF UNSATISFACTORY SCHOLASTIC STANDING.—Every student subject to the provisions of the second sentence of the paragraph above, who has not been declared ineligible to continue his work in the School will be given a formal, written notice by the Dean's Office. This notice will set forth his average grade or grades and inform him (1) that he will be subject for the ensuing year to the special supervision of the Dean who may order his dismissal from the School in the event of his failure to maintain a satisfactory scholastic standard, and (2) that he will be ineligible to receive a degree unless his work meets the scholastic requirements for graduation which will be set forth in full in such notice.

Every other student whose average final grade at the end of any semester on the work of that semester, or on all work then taken, does not exceed the minimum average grade required for graduation by more than two points will be given a notice similar to that provided for above.

Graduate Work in Law



Objectives of the Graduate Study Program

THE graduate program of the School of Law is framed with a view to the encouragement and recognition of legal scholarship. It is addressed to the needs of those who have objectives consistent with the purposes of graduate legal education. It provides training for the qualified student who aspires to a teaching career, or who wishes to become proficient in a special field of the law, to do serious legal research, to prepare himself for a public law practice in or out of government, or to acquire a broader and deeper legal education than the undergraduate curriculum offers.

Master of Laws

ADMISSION TO CANDIDACY FOR THE DEGREE OF MASTER OF LAWS

Any person who has received the first degree in law from a law school qualified for membership in the Association of American Law Schools may be admitted as a candidate for the degree of Master of Laws, provided he satisfies the Committee on Graduate Study that his objective in desiring to do graduate work in law is consistent with the purposes for which the program is offered, and provided he demonstrates to the Committee, on the basis of his law school record, his capacity to take and profit by graduate work in law. In exceptional cases an applicant who does not meet the above requirements may, on vote of the Faculty, be admitted to candidacy for this degree if he is able to demonstrate that he is specially qualified, as by reason of practice or teaching. Normally the applicant will be required to show a level of scholarship appreciably higher than that required for the first degree in law at the institution from which he received that degree. An exceptionally high record in law school and in the graduate study program is expected of those who aspire to a teaching career.

REQUIREMENTS FOR THE DEGREE OF MASTER OF LAWS

The degree of Master of Laws is reserved for students who, having demonstrated their capacity for graduate work in law, maintain a level

of scholarship substantially higher than that required for the degree of Bachelor of Laws.

The candidate for this degree is required to complete a course of study comprising not less than twenty nor more than twenty-six semester hours, or approved research equivalent thereto. Two full semesters are required for the completion of this program. A candidate for this degree is required to include in his course of study at least two of the following courses: International Law, Jurisprudence, and Legal History. Other suitable courses will be selected by the candidate subject to the approval of the Committee on Graduate Study. In addition to the minimum requirement of twenty semester hours, the candidate is required to submit an essay representing substantial research on a legal subject. This essay is to be prepared under the supervision of the instructor in charge of the field in which the research is done. The candidate will find it helpful to have formulated a project of research, or alternative projects, before his admission to graduate study or, at any rate, before pursuing his graduate study in residence. In appropriate cases the candidate will be encouraged to take related work in other departments of the University. Other courses of comparable content may be substituted for those listed. In special circumstances, credit not in excess of two hours per semester may be arranged for special, supervised research projects.

Doctor of Juridical Science

ADMISSION TO CANDIDACY FOR THE DEGREE OF DOCTOR OF JURIDICAL SCIENCE

Any person holding the degree of Master of Laws from this or any other law school which is qualified for membership in the Association of American Law Schools may, on vote of the Faculty, be admitted to candidacy for the degree of Doctor of Juridical Science, provided he completed the work for the Master's degree with distinction.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF JURIDICAL SCIENCE

Upon favorable recommendation of the Faculty, the degree of Doctor of Juridical Science will be conferred on students admitted to candidacy for that degree who complete and submit a monograph or series of essays suitable for publication and deemed by the Faculty to be of distinguished character and who pass an oral examination before a special committee appointed for that examination. At least one academic year, and, in the absence of an extension granted by the Faculty, not more than three years, must elapse between the award of the Master's degree and the award of the degree of Doctor of Juridi-

cal Science. Students who have received the degree of Master of Laws from another law school must spend at least two full semesters engaged in research at this School, and in addition may be required to complete a course of study prescribed by the Committee on Graduate Study. The monograph or series of essays required may be based upon, or be an extension of, the essay required for the Master's degree, provided substantial additional research is represented.

Post-Graduate and Refresher Courses

The School of Law provides instruction for students who desire refresher courses or who wish simply to complete a fourth year of law school work, regardless of whether they meet the requirements for admission to candidacy for graduate degrees. The successful completion of the courses taken by such students may be evidenced by certificate of the Dean.

Program of Instruction



The First-Year Program

All of the first-year courses listed below are required for graduation. A detailed description of these courses and the other courses listed under the Program of Instruction appears at pages 303 to 308 of this Bulletin.

	SEMESTER HOURS	
	Fall	Spring
Chattel Transactions	2	2
Contracts	3	3
Criminal Law and Procedure	3	
Research and Writing I	1	1
Torts	3	3
Civil Procedure I	3	
Business Associations I		3
Estates in Land		3
	—	—
	15	15

The Recommended Second-Year Program

The recommended second-year program is given below. Research and Writing II is required. Second-year students may substitute third-year courses for other second-year courses with the permission of the instructors in the substituted courses. However, a student omitting a second-year course from his second-year program may find himself unable to take that course in his third year because it may be scheduled at the same hour as a third-year course which he wishes to take.

	SEMESTER HOURS	
	Fall	Spring
Civil Procedure II	3	
Constitutional Law and Federal Courts	3	2
Research and Writing II [Required]	1	
Administrative Law		3
Business Associations II	3	
Conveyancing	3	
Restitution and Equitable Remedies		2
Negotiable Instruments	2	
Security		3
Federal Taxation I		3
Wills and Administration of Estates		2
	—	—
	15	15

The Third-Year Courses

Students are to select courses aggregating 10 to 15 hours each semester. Every student must select two of the starred courses listed below. These courses emphasize legal planning and drafting. Enrollment in each of them except Legal Aid Clinic is limited to 15. Legal Aid Clinic counts as a single starred course, though it is a year course. No student may take more than two starred courses in the same semester without the consent of the Dean and of the instructors in the starred courses involved.

I. BUSINESS

*Corporate Planning and Drafting	2	
Insurance		2
Debtors' Estates	3	
*Advanced Legal Accounting		2
*Securities Regulation (Not Offered 1957-1958)		2

II. ESTATES, FAMILY, PROPERTY

Family Law	2	
Future Interests	3	
Trusts	3	
Family Law Seminar		2
*Tax and Estate Planning		2
Federal Taxation II	3	

III. PROCEDURE, PRACTICE AND LOCAL LAW

Evidence	2	2
*Legal Aid Clinic	2	2
*Case Studies	1	
North Carolina Practice	2	
North Carolina Statutes and Decisions		2
Legal Ethics		1

IV. PUBLIC LAW

Federal Taxation II	3	
Labor Relations	3	
*Labor Law Seminar		2
Labor Standards		2
*Public Regulation of Business Seminar		3
State Taxation		2
*Tax and Estate Planning		2
Conflict of Laws		3

V. OTHER COURSES

International Law		3
Jurisprudence	3	
Legal History		2

Description of Courses



Business Courses

ADVANCED LEGAL ACCOUNTING. The study and analysis, in more detail than in Business Associations II, of the balance sheet, the income statement, and the accountancy concepts and principles that serve as controls over corporate distributions; financial reporting and investor protection; trust and estate accounting; and some problems in accounting with respect to public utility regulations. Two hours a week second semester.

MR. LATTY

BUSINESS ASSOCIATIONS I. Legal principles concerning association in business by agency, partnership, other unincorporated forms and corporations. Creation, form and nature of agency, partnership and corporation, corporate existence (de facto corporations, corporate entity and its limitations), powers, duties, liabilities and compensation of agents, partners, officers and directors, risks in conduct of business by representatives (vicarious liability in tort, authority to contract), imputation of notice and knowledge, scope of enterprise (ultra vires), revocation and termination of authority, ratification, undisclosed business associates, stability of the associational relationship. The purpose of this course is to grasp basic principles of Agency and Partnership and related principles of corporation law. (The main basic study of corporation law, however, is in Business Associations II.) Three hours a week second semester.

MR. LATTY

BUSINESS ASSOCIATIONS II. Promoters, subscription to and issue of shares, stock structure and corporate capital, dividends, preferred stock, bonds, capital increases and reduction, corporate re-acquisition of own stock, elementary principles of corporate accounting, public issue of securities, stock transfers, fundamental corporate changes (recapitalization, sale, merger and consolidation, dissolution), stockholders' suits, and certain principles concerning management and operation not studied in Business Associations I. Three hours a week first semester.

MR. LATTY

CONTRACTS. The formation and legal operation of contracts in general, with attention to problems of drafting and counseling as well as of litigation and extrajudicial settlement. Legal and equitable remedies in contract cases, including damages, specific performance, and restitutionary remedies, and important procedural devices incident to such remedies. Three hours a week throughout the year.

MR. STANSBURY

CORPORATE PLANNING AND DRAFTING. The student is given hypothetical corporate problems (perhaps taken from the practicing lawyer's desk) on a client's proposed course of action; each problem is designed to require the student to grasp the business situation and goals involved, analyze for pertinent legal principles, plan the transaction to avoid legal and business (including taxation) pitfalls, plan the requisite steps to consummate the desired transaction, draft the appropriate papers and present his research. Two hours a week first semester.

MR. LATTY

SECURITY. Mortgage and security interests in real property, and suretyship. Three hours a week second semester.

MR. SHIMM

DEBTORS' ESTATES. Comparative study of methods used for the liquidation of debtors' estates. The non-bankruptcy materials cover individual creditors' rights by attachment, garnishment, execution, creditors' bills and the like; common law composition; and general assignments. The bankruptcy materials cover, in the main, the first seven chapters of the Bankruptcy Act. Three hours a week first semester.

MR. SHIMM

INSURANCE. The nature of "insurance"; state supervision and control; types of insurance organization; the legal requirement of insurable interest; interest of others than the named insured; the measure of indemnity and subrogation; the beneficiary's interest in life insurance; the insured event, and excepted causes; warranties, representations and concealment; the making of insurance contracts; waiver, estoppel and election. Two hours a week second semester. MR. PASCHAL

NEGOTIABLE INSTRUMENTS. Comparative study of the different types of commercial instruments, their different functions and legal incidents. Two hours a week first semester. MR. KRAMER

PUBLIC REGULATION OF BUSINESS SEMINAR. See Public Law Courses, page 33 for description. Three hours a week second semester. MR. LIVENGOD

SECURITIES REGULATION. Regulation of distribution and marketing of securities and protection of the investor under the Securities Act of 1933, the Securities and Exchange Act of 1934, the Public Utility Holding Company Act of 1935 and the Trust Indenture Act of 1939, with summary treatment of other related federal legislation; the role of the Securities and Exchange Commission; a brief survey of state regulation. Considerable emphasis is placed on civil liabilities under the federal legislation. Two hours a week second semester. MR. LATTY

(Not offered in 1957-58.)

Property Courses

CHATTEL TRANSACTIONS. The course covers most of the topics generally treated under the heading of Personal Property, Bailment and Sales; application of the concepts of possession and title in the law of personal property and sales, with special attention to the judicial techniques with these concepts; the bailment relationship; artisan's lien; transfer of chattels by gift, sale and miscellaneous inter vivos transactions. In Sales, the emphasis is on enforcement of buyers' and sellers' rights and on sales financing. Two hours a week throughout the year. MR. LATTY

CONVEYANCING. Form and execution of deeds, description in deeds; rents, licenses, easements and profits; covenants and agreements running with the land at law and in equity; estoppel by deed; recording and title registration; aspects of public control of land use. Three hours a week first semester. MR. BOLICH

ESTATES IN LAND. Historical introduction to real property with a detailed consideration of the modern law of possessory estates, including the fee simple, the fee tail and its statutory substitutes, the life estate, the estate for years and other non-freeholds; concurrent ownership; equitable estates; types of future interests; waste; distribution of benefits and burdens as between owners of present and future interests. Three hours a week second semester. MR. BOLICH

FUTURE INTERESTS. Future interests in real and personal property; reversions; vested and contingent remainders; executory interests; rights of entry; possibilities of reverter; gifts to classes; powers; perpetuities; construction of wills and deeds as affecting the validity and characteristics of the interests created thereby. Three hours a week first semester. MR. BOLICH

TAX AND ESTATE PLANNING. Seminar devoted to problems and techniques of tax and estate planning. Federal Taxation I and Federal Taxation II and Future Interests are prerequisite to enrollment in the seminar. Enrollment limited. Two hours a week second semester. MR. BOLICH AND MR. LOWNDES

TRUSTS. The nature, creation and elements of a trust; transfer of the beneficiary's interest; administration of trusts; termination and modification of trusts; charitable trusts; liabilities to third persons; and liabilities of third persons. Three hours a week first semester. MR. LOWNDES

WILLS AND ADMINISTRATION OF ESTATES. Descent and distribution; property rights of surviving spouse, children and descendants; ancestors and collaterals; effect of claimant's misconduct. Making and revoking wills; testamentary capacity; execution of wills; holographic and special types; integration; testamentary

character and intent; revocation; operation of legacies and devises. Probate and administration; grant of administration; probate and contest of wills; assets; contracts, sales and investments by personal representative; claims; settlement of the estate. Two hours a week second semester.

Public Law Courses

ADMINISTRATIVE LAW. The formulation of statutory schemes of administrative regulation; the organization of administrative agencies; the determination, promulgation and enforcement of administrative programs; the respective spheres of administrative and judicial responsibility; judicial control over administrative action. Practice and procedure before administrative agencies; informal conferences and negotiations; formal hearings; constitutional limitations. Three hours a week second semester. MR. KRAMER

CONSTITUTIONAL LAW AND FEDERAL COURTS. Judicial protection against arbitrary governmental action; the history of the concept of a "higher law"; the constitutional clauses relied upon. The organization and jurisdiction of the federal courts; when and how judicial review can be invoked; limitations on governmental power with respect of economic matters, civil liberties and criminal and civil procedure. The powers of Congress, express and implied; limitations on State governmental powers resulting from the existence and from the exercise of Congressional powers. The constitutional questions involved in administrative law, conflict of laws, intergovernmental tax immunities, jurisdiction to tax, and state taxation of interstate commerce are covered more fully in other courses. Three hours a week first semester, two hours a week second semester. MR. MAGGS

CRIMINAL LAW AND PROCEDURE. An introductory study of the law of crimes and the administration of criminal justice; analysis of the criminal act and the mental element in crime; consideration of specific offenses as defined by statute and the common law; discussion of typical defenses in relation to specific crimes; elementary criminal procedure; study of the Anglo-American penal system. Three hours a week first semester. MR. LIVNGOOD

FEDERAL TAXATION I. An introduction to the federal taxation with particular emphasis on the federal income tax. The course is designed as a final course for students who do not intend to specialize in tax practice and as an introductory course for those who do. Three hours a week second semester. MR. LOWNDES

FEDERAL TAXATION II. A more advanced course in federal taxation. The principal emphasis of the course is on the federal estate and gift taxes, and the relation of those taxes to the federal income tax. Three hours a week first semester. MR. LOWNDES

INTERNATIONAL LAW. A survey of public international law of peace, as evidenced especially in decisions of national and of international courts; the drafting and interpretation of treaties; the nature and handling of international claims; the organization and jurisdiction of international tribunals, with special reference to the International Court of Justice; developments with respect to the codification of the law. Three hours a week second semester. MR. WILSON

LABOR LAW SEMINAR. An intensive examination of significant problems in collective bargaining, union-management relations and labor dispute settlement, with emphasis upon the drafting and interpretation of contract clauses, theories and techniques in contract negotiation and grievance handling, voluntary arbitration and other procedures for the adjustment of disputes, and the interrelation of the legal and economic aspects of labor problems. Prerequisite: Labor Relations. Two hours a week second semester. MR. LIVNGOOD

LABOR RELATIONS. A study of the law relating to collective bargaining and concerted labor activities, including the National Labor Relations Act and related legislation, the legal aspects of strikes, boycotts and picketing, the negotiation and

administration of collective bargaining agreements, procedures for the settlement of labor disputes, and relations between the union and individual employees. Three hours a week first semester. MR. LIVENGOOD

LABOR STANDARDS. Government regulation of conditions of employment, including the Fair Labor Standards Act and other wage-hour and child-labor statutes, unemployment insurance and other social security legislation, employers' liability and workmen's compensation acts, and related laws establishing minimum standards for the creation, continuance and termination of the employment relationship. Two hours a week second semester. MR. LIVENGOOD

PUBLIC REGULATION OF BUSINESS SEMINAR. Intensive study of the federal antitrust laws and their common-law background, with emphasis on the economic policies involved. As a corollary of critical examination of the Sherman Act, Clayton Act, Federal Trade Commission Act and related legislation designed to enforce competition as the primary control of the economic system, some consideration is given to legal measures which supplement or replace competition, such as direct regulation of business and government intervention by public loans, guaranties and ownership. Three hours a week second semester. MR. LIVENGOOD

STATE TAXATION. Constitutional limitations on the taxing power; jurisdiction to tax; state excise taxes; and the general property tax. Two hours a week second semester. MR. LOWNDES

TAX AND ESTATE PLANNING. See Property Courses, page 304, for description. Two hours a week second semester. MR. BOLICH AND MR. LOWNDES

General Courses

CONFLICT OF LAWS. A study of the special problems which arise when the significant facts of a case are connected with more than one jurisdiction. Recognition and effect of foreign judgments; choice of law; federal courts and conflict of laws; the United States Constitution and conflict of laws. Three hours a week second semester. MR. KRAMER

FAMILY LAW. A seminar approach to the cases, statutes, and sociological theories covering the contract to marry, its formation and breach; marriage; annulment; divorce; separation; property rights; and international jurisdiction. Selected materials. Two hours a week first semester. MR. BRADWAY

SEMINAR IN FAMILY LAW. A seminar approach to the efforts of the social sciences, including the law, to deal with the intricate and perplexing problems of the modern family. Readings are assigned in legal and sociological material. Class discussions are based upon some central topic, such as divorce, domestic relations courts, etc. Written reports required in lieu of an examination. Family Law is prerequisite. Two hours a week second semester. MR. BRADWAY

JURISPRUDENCE. Discussion of some of the basic problems of classical and contemporary juristic theory, with applications to cases and statutes. Open to all graduate students, and, with the consent of the instructor, to qualified second and third year students. Three hours a week first semester. MR. KRAMER

LEGAL HISTORY. A study of the development of fundamental English and American legal institutions, with primary emphasis upon the establishment and growth of American law from the colonial period to the present. Two hours a week second semester. MR. BOLICH

NORTH CAROLINA STATUTES AND DECISIONS. A study of selected statutes of North Carolina with discussion of their application, and an analysis of the decisions of the Supreme Court of North Carolina construing them. Two hours a week second semester. MR. BRYSON

RESTITUTION AND EQUITABLE REMEDIES. A survey of equitable remedies in general (including enforcement of equity decrees) and of important parts of the fields of equity and restitution that are not covered in other courses. Two hours a week second semester. MR. PASCHAL

TORTS. The bases of liability in damages for personal injuries and injuries to property; bases other than fault; negligence; intentional infliction of harm. Procedure in jury trials; proof of negligence; causation and "proximate cause"; defenses; the damages recoverable and equitable relief obtainable. Special rules applicable to occupiers and owners of land, motor vehicle accidents, suppliers of goods and remote contractors. Misrepresentation and fraud; defamation; assault and battery; false imprisonment. Three hours a week throughout the year. MR. MAGGS

Procedure and Practice Courses

CASE STUDIES. Detailed analysis of an important civil suit, under supervision of a visiting instructor who was counsel therein. The instructor's files and the record and briefs will be studied. Consideration will be given to how the matter first arose and what business or other problems of the client were involved; how counsel first analyzed the matter and how he ascertained relevant facts; how counsel prepared for and conducted the trial and appellate proceedings. One hour a week first semester. INSTRUCTOR TO BE ANNOUNCED

CIVIL PROCEDURE I. An introduction to judicial administration and the interrelationship of the federal and state court systems; pleading in civil actions at common law and under the modern codes with emphasis on the Federal Rules. Three hours a week first semester. MR. PASCHAL

CIVIL PROCEDURE II. Parties to a civil action; right to jury trial; the division of function between court and jury; instructions; jurisdiction; res judicata; appellate procedure. Three hours a week first semester. MR. PASCHAL

EVIDENCE. A study of the common-law rules of evidence, including the requirements of relevancy and materiality; competency and privilege of witnesses, examination and cross-examination, burden of proof and presumptions, judicial notice, and functions of judge and jury. Two hours a week throughout the year. MR. STANSBURY

LEGAL AID CLINIC. This course is designed to develop in the student professional self confidence, responsibility to the program of the organized bar, professional self control. During the first semester the student learns to: interview a client in an orderly manner, determine the gaps in the client's story and fill in these gaps with information from other proper sources; evaluate facts; make a record of facts including the documents used for the purpose; diagnose a case for legal "symptoms" and develop legal theories; organize research; plan a campaign at law. The class becomes familiar with the courthouse as a source of facts; and with a law office as a place in which a lawyer functions. Special exercises like searching a title to real estate, preparing a criminal case for trial, are assigned. During the second semester the student learns to conclude a case in an orderly professional manner by education; by conciliation; by litigation. The climax is a jury trial with expert witnesses. The students operate under the supervision of a staff member throughout the year. Students are assigned to duty in rotation in the Legal Aid Clinic office and in the downtown office. This gives them a chance to interview flesh and blood clients and to see the progress of real cases. By preparing trial briefs in court and criminal cases the student learns how to get ready for his appearance in the court room. Two hours a week throughout the year. MR. BRADWAY

LEGAL ETHICS. A seminar approach to the ethical problems of the lawyer and the profession. Readings are assigned in legal biography, law reform, the history of the profession, legal aid work. Class discussions cover canons of ethics, statutes, cases, and opinions of grievance committees dealing with the daily problems of the practicing lawyer. A written report is required on some phase of the reform of the administration of justice. One hour a week second semester. MR. BRADWAY

NORTH CAROLINA PRACTICE. A study of the steps in a civil action at law from the issuance of process to the entry of final judgment including service of process; appearance and waiver of process; selecting the jury; various motions made during the trial; submission of case to jury; verdict; judgment; noting and per-

fecting appeal. Also included are such topics as jurisdiction of various courts in North Carolina; venue; trials without a jury; provisional remedies and special proceedings. Two hours a week first semester.

MR. BRYSON

Legal Research and Writing

RESEARCH AND WRITING I. Classroom instruction and individual problems in the use of law books, the preparation of memorandums of law, and moot court briefing and argument. The first year of a two-year program designed to familiarize the student with the materials and methods of legal research and legal writing. Two semester-hours credit.

MESSRS. BRYSON, BRADWAY,
KRAMER, AND PASCHAL.

RESEARCH AND WRITING II. The second year of the two-year program of research and writing. In addition to more advanced work of the kind involved in the first-year program, the student will assist in evaluating the work of first-year students and in judging first-year moot court arguments. Required of all second-year students. One semester-hour credit.

MESSRS. BRYSON, BRADWAY,
AND PASCHAL

Upon recommendation of the Committee on Graduate Study, seminars not listed in the Bulletin may be created or arrangements made for supervision of special research by individual graduate students in any subject.

All matters presented in this Bulletin are subject to change as the University or the School of Law may deem expedient.

THE SCHOOL OF MEDICINE

Registration of Students, Monday, September 16, 1957

General Information

Introduction

Duke University School of Medicine and Duke Hospital were established in 1930, through the munificent gift of the late James B. Duke. The School of Medicine and Hospital are located in the same building situated on the campus of Duke University. Both have been planned to insure the greatest correlation between the various departments. The students in the School of Medicine are accorded the same privileges and subject to the same laws and regulations as those of the other divisions in the University. Seventy-six students are admitted to the first year class each year and on October 1, 1956 three hundred and sixteen students were enrolled.

Aims of the School

Duke University School of Medicine, from its beginning in 1930, has maintained as its major objectives: (a) the cultivation and teaching of medicine on a strictly scientific basis; (b) the correlation of medical research with medical teaching at all levels of its teaching, and (c) the continuous search for and experimentation with new or improved methods of teaching scientific medicine. In order to attain these objectives, the School has been organized, its physical plant planned, and its administrative structure constituted so that there exists the closest possible academic and physical relationship between undergraduate and graduate work in the University and the School of Medicine, and also between the basic medical sciences and the clinical sciences within the School and its integrated teaching Hospital. The professional staff of the School is composed of two general categories, those with permanent appointment and unlimited tenure, and those with temporary appointment. The latter, the much larger group, is maintained on a highly fluid basis, which makes possible a high degree of selectivity in appointment for academic training and scientific research. The smaller group of permanent appointees has in every individual a background characterized by academic and scientific attainment. The professional, academic, and scientific environment created by the staff is thus such as to engender scientific inquiry and to encourage diligent pursuit of the medical sciences in all their relationships. The staff at all levels devotes its entire professional time to the activities of the School or Hospital.

Degrees

Doctor of Medicine. The degree of Doctor of Medicine is conferred on those who have completed, to the satisfaction of the Committee on Health Affairs, the twelve quarters of eleven weeks each of the curriculum of the School of Medicine, and have signed an agreement that they will spend at least two years of the succeeding three years in hospital or laboratory work acceptable to the Committee on Health Affairs. As a guarantee of this pledge the diploma is deposited in the Treasurer's office until after the completion of this training. At the time of graduation a temporary certificate is issued which must be returned prior to the delivery of the permanent diploma. Failure to fulfill this agreement constitutes a waiver of any claim to possession of the diploma and the degree Doctor of Medicine. At present one half of the required period of approved hospital or laboratory may be active duty in the Armed Forces or U. S. Public Health Service.

Bachelor of Science in Medicine. After the completion of six quarters in Duke University School of Medicine, Duke University, on the recommendation of the Committee on Health Affairs, grants the degree of Bachelor of Science in Medicine to medical students who have completed creditable investigative work, prepared an acceptable report of the investigation, and passed an examination upon the subject of investigation before an advisory committee. Students who elect to undertake work toward this degree must obtain written permission from the Committee on Health Affairs after approval of their program by the head of the department in which the work is to be done. No credit toward this degree is given for additional college work. All students in good standing are encouraged to undertake such investigative work as they may elect with the approval of the head of the department in which they wish to work. All requirements must be completed three months prior to the date on which the B.S. degree is granted.

Bachelor of Science in Medical Technology. A minimum of two years of approved college work is required for admission. The degree Bachelor of Science in Medical Technology is awarded upon successful completion of a twenty-one months' course. The registration fee which includes tuition, student health and diploma fee for the entire course, is \$300. Other student activity fees are optional. Further information as to specific requirements may be obtained from Dr. Haywood M. Taylor, Duke Hospital, Durham, North Carolina.

Master of Science and Doctor of Philosophy. Work leading to each of these degrees may be pursued in the preclinical departments. For further details concerning conditions under which these degrees are

awarded consult the Bulletin of the Graduate School of Arts and Sciences.

Student Government

Members of the student body elect an Honor Council, in which each class is represented. It is the duty of the Honor Council to hear all cases involving breaches of conduct on the part of members of the student body. All new students entering the School are required to comply with this system of government.

Medical Care

ELBERT L. PERSONS, A.B., M.D., *Physician in Charge and Associate Professor of Medicine*, CAROLINE HELMICK, A.B., M.D., *Woman's Campus Physician*.

With exceptions noted below, full medical and surgical care is furnished to all regularly matriculated medical students of the University who have paid the quarterly General Fee. This service is under the direction of the Physician in Charge with the co-operation of the Staff of Duke Hospital. It includes hospitalization (limited to thirty days), medical and surgical care, drugs, dressings, x-ray studies, and ward but not special nursing. A charge for board is made at the same rate as in the University dining halls. Refraction of eyes and treatment of teeth and of all chronic and pre-existing conditions, such as diseased tonsils, hernia, elective surgery, chronic skin conditions, endocrine disturbances, etc., or accidents or illnesses occurring during vacations or while off the campus are not included in this service. The cost of any necessary braces and orthopaedic appliances, as well as of special nursing must be borne by the patient. If the student has insurance providing hospitalization, surgical, or medical benefits, the benefits shall be applied to the cost of his medical care.

Facilities

Duke Hospital. Duke Hospital, an integral part of Duke University School of Medicine, has every modern convenience for the diagnosis, proper care, welfare and comfort of the patients, both ward and private, white and colored, whether they come from Durham or from a distance. It has 591 beds, including 30 bassinets for newborn infants, and 20 premature nursery bassinets. *Medicine*, including dermatology and neurology, has 77 ward beds; *surgery*, including urology, otolaryngology, ophthalmology, and orthopaedics, 135 ward beds; *obstetrics*, including *gynecology*, 59, and 30 bassinets; *psychiatry*, 30; and *pediatrics*, 45. There are 225 private rooms and semiprivate cubicles, 12 air-conditioned operating rooms, 4 obstetric delivery rooms, and ward and student laboratories. Offices and examining rooms for members of the Medical Faculty are located in the Hospital.

A new four million dollar air-conditioned wing, nearing completion, adds 109 private beds, private and public clinic facilities, 10 operating rooms, expanded x-ray services, an ambulant patients' dining room, modern instructional space and improved general service facilities. The Hospital has been approved for internships and residencies by the Council on Medical Education and Hospitals of the American Medical Association, and is approved by the Joint Commission on the Accreditation of Hospitals.

Duke Hospital and its Out-Patient Clinic were opened for patients on July 21, 1930. Through December 31, 1956, 547,218 individuals have been examined, diagnosed and treated. The average daily census of hospital patients during the past year was 450; 204,610 visits were made to the Out-Patient Clinics during the same period. Eighty-two percent of these patients came from 98 North Carolina counties. The remaining eighteen per cent were from many states of the Union and from foreign countries.

The Private Diagnostic Clinic was organized to co-ordinate the diagnostic studies, and to give better care to the complicated problems arising in the examination of private patients. The Clinical Staff of Duke Hospital and School of Medicine forms the professional staff of this clinic. The offices and examining rooms are in Duke Hospital, and all of the laboratory and diagnostic facilities of the Hospital and School of Medicine are utilized by the Clinic.

Veterans Hospital. The Durham Veterans Administration Hospital is located within walking distance of the School of Medicine. This 485 bed general hospital was opened in April, 1953. Its full-time professional staff are all members of the faculty of Duke University School of Medicine and the house staff training at Veterans Hospital and Duke Hospital are closely integrated.

Library.

JUDITH FARRAR, A.B., B.S., *Librarian and Associate Professor of Medical Literature.*
MILDRED PERKINS FARRAR, A.B., *Assistant Librarian.*

"To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all."—SIR WILLIAM OSLER.

In addition to the General Library of Duke University and the departmental libraries of biology, chemistry, physics, etc., which have 1,268,871 volumes available for medical students, Duke Hospital Library contains 60,900 volumes of American and foreign medical literature and subscribes to 685 current American and foreign medical and other scientific journals. These books and journals are available daily from 8:30 A.M. to 10:30 P.M. for the students, nurses, staff, and medical profession.

GENERAL INFORMATION FOR APPLICANTS

Years of college work required for entrance	3
Resident tuition and fees for first year	\$1020
Non-resident tuition and fees	\$1020
Estimated cost of equipment (books, supplies, etc.) first year	\$265
Estimated minimum cost of room and board for first year	\$600
Amount of non-refundable application fee	\$5
May give early decision to applicant preferring this school but offered a place in another school	Yes
Medical College Admission Test required	Yes

1958-59 FIRST YEAR CLASS

STATISTICS FOR 1956-57
FIRST YEAR CLASS

Size of first year class	76	Number of applicants	820
File application for admission between	Aug. 15, 1957 Dec. 1, 1957	Percentage of entering 1st yr. class who had completed four years of college	74%
Applicant will be notified of action on his application between	Nov. 1, 1957 Feb. 15, 1958	Percentage of entering 1st yr. class interviewed	99%
Amount of deposit fee required on or after January 15, 1958, to hold place in class if applicant is accepted	\$50	Percentage of entering 1st yr. class for whom results of the Medical College Admission Test were available	100%
Date entering class starts program	Sept. 15, 1958	Percentage of applicants who were women	5%
Address inquiries to: Committee on Admissions Duke University School of Medicine Box 3710, Duke Hospital Durham, North Carolina		Percentage of women in the 1st yr. class	5%
		Number of out-of-state residents in 1st yr. class	54
		Number of foreign residents included in the item above	0

Admission

"I request that great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination and application evincing a wholesome and real ambition for life."—James B. Duke.

Intelligence, character and a transparent integrity are the essential qualifications for admission.

A premedical student should be aware of the importance of a well-rounded general education as a preparation for the study of medicine and not limit himself to scientific courses. Experience has shown that the medical student with a considerable science background enjoys no advantage over his classmates with less premedical science preparation. The Admissions Committee believes that of greater importance than the specific subjects taken is the manner in which the college load is carried. The premedical student would be better advised to secure a knowledge of the principles and a thorough appreciation of the interrelations of the basic sciences than to accumulate credits in many courses. He should learn how to work independently, to observe critically and to analyze rather than to simply store the information presented. Good study habits and efficacious use of time are perhaps the most important tools a student can bring to the study of medicine. His choice of studies beyond those required for admission should be governed by his own chief interests and by the intellectual stimulus to be derived from the work. In general he should avoid courses in subjects which are included in the medical curriculum.

Application for Admission

Application forms may be obtained by writing to the Committee on Admission, Box 3710, Duke Hospital, Durham, N. C. Please do not send request before August 15th. Formal applications will be accepted by the Committee on Admissions only between 15 August and 1 December.

Due to the large number of qualified applicants to all medical schools, each student is urged to apply to at least four schools. In the event an applicant is accepted by another school before he has heard from Duke, and is forced to secure that acceptance with a deposit, he may request special consideration by our Committee.

Requirements for Admission

1. A minimum of ninety semester hours of approved college credit is necessary for admission to the school. It must include:

- (1) Two years of English of which the second year should be chiefly composition and theme writing.
- (2) Two years of chemistry, the first inorganic and the second analytic and organic.
- (3) One year of college physics.
- (4) One year of biology.
- (5) One year of mathematics.

2. Medical College Admission Test. This test is required of all applicants. It is administered by the Educational Testing Service, P. O. Box 592, Princeton, New Jersey. This test is given at many of the colleges throughout the country in May and November of each year. Arrangements for taking this test should be made by the student through his premedical advisor.

Selection

Selection is made during the period October 1 through February 15 for the students entering the following October. The data on each candidate are carefully screened by the Committee on Admissions. When further evidence is indicated a personal interview is requested. If the distance from Durham is permissible the interview is conducted here. Where the distance is prohibitive the candidates are referred to our regional representatives. Many factors are evaluated by the Committee in the selection process. In the end those students are admitted who show the most promise for exceptional future practice of medicine. The candidate is notified as soon as possible whether or not he has been accepted. If he has been accepted it is necessary to send a deposit of \$50.00 by the succeeding January 15 in order to insure enrollment. This deposit is applied toward tuition. Inasmuch as admission must be offered a considerable period in advance of matriculation the admission must be provisional upon the successful completion of the remaining college work. In addition a physical examination is necessary prior to enrollment.

Advanced Standing

Applications for transfer into the second and third year classes will be considered only if space permits. No applications for entrance to the fourth year will be considered. For entrance to the third year, Part I of the National Board Examination will be required as evidence of satisfactory accomplishment in the subjects of the first two years.

Curriculum

Beginning 16 September 1957 the academic year will become thirty-six weeks (instead of previous thirty-three weeks). For first and second-year students the year will be divided into three terms of twelve weeks each; for third and fourth-year students there will be four terms of nine weeks each.

In the first two years the instructional program does not adhere rigidly to the above terms, but rather involves interdepartmental correlations. The third year is made up of nine-week terms of medicine, surgery, obstetrics-gynecology and psychiatry. The fourth year is comprised of nine-week terms of medicine, surgery and pediatrics and one term as an elective. Elective courses have been organized for small groups, or the time may be utilized in independent work (including research) in any department, clinical or preclinical. Arrangements for taking such courses or doing other work are made through the Curriculum Committee.

Students are encouraged to take a portion of their medical school work at other schools. Permission must be obtained in advance from the Committee on Health Affairs and the full tuition at Duke must be paid for that quarter. If the charges at the school at which the work is taken are less than those at Duke they will be paid by Duke and if more the difference must be made up by the student. At the completion of the work in another school an examination in the subject may be conducted by the department at this medical school.

Promotion

Promotion committees composed of the heads of the departments offering instruction in those years periodically review the records of students. The Committee on Health Affairs, acting on recommendations of the promotion committees promotes those qualified, warns those whose work is unsatisfactory, places on probation those whose work is very unsatisfactory and requests the resignation of those considered unpromising candidates for the degree Doctor of Medicine. A student wishing to appeal this decision may do so to the chairman of the Committee on Health Affairs within two weeks of his notification.

The Committee on Health Affairs reserves the right to require the withdrawal of any student at any time if, in the opinion of the majority of its members, he should not continue his course.

Financial Information

Fees and Expenses

Listed below is a table of the approximate expenses per nine months academic year of registration in the School of Medicine. These figures represent the average among the men, women, married and single medical students during the academic year 1955-1956.

ESTIMATED EXPENSES PER ACADEMIC YEAR

Tuition and fees	\$1020.00
Board	600.00
Room	270.00
Books	100.00
Laundry	100.00
Insurance, instruments and incidentals*	150.00
	<hr/>
	\$2240.00

One fourth of the total fees is due and payable at the beginning of each nine-week term. A fine of \$5.00 is charged for late registration after the first 5 days of the term. No credit will be given for any term in which the tuition has not been paid whether the work has been done here or elsewhere. Students who have been permitted by the Curriculum Committee to spend a term at another medical school or hospital may subtract the amount of tuition paid elsewhere from that due here for that quarter.

It is not advisable for a student to attempt outside work to defray his expenses during the academic year. The curriculum is so crowded that the results usually are disastrous to his health and academic standing. A few students in the upper classes successfully carry out small part-time jobs, but this must not be relied upon for income.

Information about rooms in the Men's Graduate Center and Epworth Hall on the Woman's College Campus may be obtained by writing to the Duke University Housing Bureau, Duke University, Durham, N. C. Information concerning loans, fellowships, and awards is given in the *Bulletin of the School of Medicine*.

Departments of Instruction



Anatomy

The required courses of instruction in gross human anatomy, histology, and neurology are scheduled for five and one-half days a week for a period of sixteen weeks during the first year. Emphasis is placed upon the study of material in the laboratory. In an attempt to utilize more fully the laboratory time, visual educational methods are employed as fully as possible. These techniques consist of colored motion pictures of demonstration dissections, colored lantern slides, and motion pictures, both embryological and neurological. All of the instruction is designed to be as informal and as nearly individual as possible. General principles and the functional viewpoint of living anatomy are stressed in the hope that the student may be stimulated to secure a working knowledge of anatomy in the broadest sense. Whenever possible, fresh tissues and living cells are made available for examination, and clinical cases exemplifying anatomical principles are studied whenever they are available at appropriate times. Through the co-operation of the Department of Radiology, the students are given an opportunity to study portions of the living human body as revealed by the fluoroscope and roentgenograph. The following elective courses are offered:

Demonstrations in Anatomy. Using dissections already prepared, weekly demonstrations of selected regions or systems are made by the members of the group. Sixth quarter—Two hours per week by arrangement. Second-year students in groups of 10.

Review in Anatomy. During the sixth quarter, a review in anatomy will be presented by the visual education methods outlined above, covering gross and neuro-anatomy, and histology.

Special Neuro-anatomy. Laboratory work and conferences upon selected portions of the human central nervous system. Limited to 6 junior or senior students. Two hours weekly by arrangement.

Brain modeling. Free-hand reconstruction in clay, from gross and sectioned material, of the chief tracts and nuclei of the human brain stem. By arrangement—4 to 10 students.

Experimental Neurology. An operative and laboratory study of the effect of various lesions upon the central and peripheral portions of the nervous system. 4 to 8 junior and senior students by arrangement. Prerequisite—operative surgery.

Advanced Studies in Anatomy. These may be arranged at any time under the direction of the various members of the staff.

Review for Orthopaedic Anatomy. A one hour weekly review of the anatomy related to orthopaedic surgery.

Review for Surgical Anatomy. A one hour weekly review of the anatomy related to general surgery.

Biochemistry

The required course in biochemistry for first-year students is given over a period of sixteen weeks in the spring semester. The first phase is devoted to a survey of the chemistry of the materials fundamental to all life, proteins, fats and carbohydrates and the nature of enzymatic action. This is followed by consideration of those events in intermediary metabolism common to the life of all mammalian cells. Thereafter, the course in biochemistry is integrated with that in physiology. The special metabolism of muscle, nerve, the eye, the kidney, bone, connective tissue and the chemical aspects of digestion, respiration, electrolyte, acid-base and fluid balance are presented at such times with relation to the study of the physiology of these organs and processes as to facilitate integration and correlation of the two disciplines. The final phase of the program is a consideration of human nutrition. Throughout the course, the student performs laboratory experiments designed to illustrate and amplify concepts considered in lectures and conferences.

Since the success of the students in this course is largely determined by the adequacy and ready availability of their premedical training, it is urged that all students review the fundamental laws, theories, and facts of chemistry before the beginning of the course. A circular outlining the topics requiring special attention is sent to all students upon admission. Additional copies of the circular may be obtained from the Dean's Office.

Biochemical Research. The facilities of the department, including various types of research equipment and the clinical material of the blood chemistry laboratory, are available to properly qualified students for independent or supervised investigations. Chemical investigations of problems in biochemistry or in conjunction with the clinical and pathological departments may be carried on.

Chemistry of Proteins and Enzymes. A two-hour seminar is given weekly throughout the Autumn, Winter and Spring Quarters in alternate years.

Intermediary Metabolism. A two-hour lecture course and seminar conducted during Autumn, Winter and Spring Quarters. Given annually.

Advanced Seminar in Nutrition. A three-hour lecture and seminar course in modern nutritional concepts. Given alternately with *Intermediary Metabolism* during Autumn Quarter.

Biochemistry of Disease. A seminar course meeting once weekly to discuss etiology and pathogenesis of metabolic diseases from the biochemical viewpoint. Given in alternate years in the Spring Quarter.

Medicine

Introduction to Clinical Medicine and Physical Diagnosis. This course is initiated, in the fifth quarter, by introductory lectures, case discussions, and instruction in the methods of physical examination and history taking. Early in the course students begin work at the bedside in the examination of selected patients. Emphasis throughout is placed on instruction individually or in small groups. The interpretation and pathogenesis of all abnormal findings are stressed. The division of Neurology and Department of Psychiatry provide training in neurological and mental examinations. This plan of teaching continues in the sixth quarter, when, in addition, instruction in the more specialized methods of examination is provided through the co-operation of the Departments of Surgery, Obstetrics, Gynecology, and Radiology.

Clinical Microscopy is given in the fifth quarter. The course includes the essentials of hematology and the examination of fresh material, such as urine, stools, spinal fluids, sputum, transudates, and exudates. The most important parasites of man are studied by the use of fresh and museum material. Second-year and senior students are given opportunities for special work and for investigation. This course is supplemented in the Junior and Senior years by Hematology Conferences, which are held weekly, and Ward Rounds, which are held three times weekly.

Cutaneous Medicine and Syphilology. Instruction consisting of lectures, seminars, the study and treatment of patients in the out-patient clinics, and on the wards is offered as an elective course.

Junior and Senior Medicine. The medical students are assigned to the medical wards as clinical clerks for three-quarters of their time and, for the other part of their time, to the medical outpatient department where they examine patients.

Microbiology

Bacteriology, Immunology, and Mycology. The required course is given in the fourth quarter. An intensive study is made of the common bacteria, fungi, and viruses which cause disease in man. The

scope of the laboratory course is reasonably wide and acquaints the student with all the methods and procedures employed in bacteriological laboratories. Most of the lecture time is devoted to the immunological and epidemiological aspects of infection. The instruction is designed to give the students a clear conception of: (1) how organisms gain entrance to the body, (2) the type of poisons which they produce, (3) the nature of immune bodies which are produced by the host, and (4) the methods of preventing the disease by active and passive immunization.

Research Bacteriology. Opportunities for original investigations are afforded a few specially qualified students.

Clinical Bacteriology. During their clinical clerkships on medicine (one quarter each for junior and senior classes), the students may perform the routine and special bacteriological work for the patients assigned to them on the teaching service, under the direction of the Department of Bacteriology and in parallel with the Biological Division of the medical clinic.

Obstetrics and Gynecology

Second year students receive 8 hours of instruction in the fundamentals of Obstetrics, Gynecology and Endocrinology during their course in physical diagnosis in the sixth quarter.

During one quarter of the junior year each student group attends Ward Rounds at 8:30 A.M. on Mondays, Wednesdays, and Saturdays; Preoperative and Predelivery Conferences on Tuesdays and Fridays; tutorials on Mondays, Tuesdays and Wednesdays; Pathology Conference on Thursdays and Staff Meetings on Fridays with members of the staff and the staff of other departments. They also attend an Endocrine Clinic once a week; an abnormal Obstetric Clinic once a week; regular Out Patient Clinic five times weekly for nine weeks.

The students for nine weeks during the Junior year are also assigned patients on the Obstetric and Gynecologic Wards.

Pathology

General Pathology. The course in general pathology is given during the fifth and sixth quarters of the curriculum, following completion of the prerequisite courses in anatomy, physiology, biochemistry and bacteriology. All the work of the class is done with small groups, each under the guidance of a senior instructor and his junior assistant. The histological aspects of the pathological processes are studied coincidentally with the gross anatomical and physiological alterations of the tissues, thus maintaining a unity of conception of disease. As the

various pathological processes and the diseases arising from their elaboration are studied by the student groups, assignments involving reports on the study of groups of cases are made by individual students. The group work and the individual student reports are supplemented by weekly conferences involving the class as a whole and dealing with problems presented by current autopsies and with other problems of general importance. Student collaboration in post-mortem studies is required. Cases thus studied are presented by the student before the class under the direction of the staff; this takes the form of a clinical-pathological conference in which each student plays a particular role.

Elective Courses. Special courses in pathology are given to students who have completed the course in general pathology. These courses are available through special arrangement.

Clinical-Pathological Conference. A weekly clinical-pathological conference for advanced study is held on Saturdays. It is open to all persons interested, but is designed especially for the Hospital and Medical School Staff. Attendance by all the students is expedient but is optional. Miscellaneous weekly pathological conferences dealing with current cases under treatment on the various services are held for instruction of the staffs concerned.

Student Research. Research facilities are provided for competent students. Those who show an interest in investigative work are given every encouragement and are allowed to work independently or in collaboration with the staff.

Postgraduate Instruction. The staff of the department is composed of senior nonresident and junior resident members. The resident staff consists of interns, assistant residents, and a resident; all of these are active teachers as well as advanced students of disease. Ample opportunity for the development of a career in the field of pathology is provided for these men.

Medicolegal Instruction. The department works in close cooperation with the local coroner's office. Special medicolegal investigation for others are undertaken from time to time. The department collaborates with other departments of the Schools of Medicine and Law in a course in legal medicine that is given in alternate years.

Pediatrics

Junior and senior students, during their medical quarters, have pediatric ward rounds one hour each week. These junior students receive instruction in introductory pediatrics and the physical diagnosis of infants and children. The senior students are divided into three groups, each of which spends one quarter in pediatrics. During this quarter they are assigned in rotation as clinical clerks on the

children's ward, in the nursery, pediatric out-patient department and the specialty clinics—well baby, nephritis, cardiac, allergy, hematology, convulsive disorders and chronic pulmonary disease. In addition to ward rounds, a weekly staff conference and daily out-patient teaching clinics, special conferences are devoted to normal growth and development, pediatric roentgenology, practical aspects of pediatric nursing procedures and the preparation of diets for infants and children. Under the supervision of the Social Service Department, students visit homes to investigate the social, environmental and family aspects of disease in certain of their patients. Elective courses: Senior students may spend two weeks in general practice with Instructors in General Practice. In addition to the ten pediatric internships, there are four in which six months each are spent in obstetrics and pediatrics for graduates who plan to enter general practice. Six assistant residencies and two residencies are available.

Physiology and Pharmacology

The course in medical physiology is given during the sixteen weeks of the second semester of the first year. There are lectures, laboratories and conferences each week in which are presented the general principles of human physiology and their general application to the practice of medicine. The physiology and biochemistry courses are closely integrated.

The course in pharmacology is taught in the first quarter of the second year (fourth quarter). Lectures, laboratories and conferences deal with the mode of action of drugs in terms of biochemical and physiological processes.

Physiological and Pharmacological Research. The facilities of the department include modern types of research equipment. There are special facilities for research in the fields of respiration, high altitude physiology, circulation and cellular metabolism. Properly qualified students are encouraged to undertake original research in physiology and pharmacology under direction of various members of the staff.

Seminars. Each fall term a seminar for graduate students in physiology is conducted by the staff.

Preventive Medicine and Public Health

Preventive Medicine and Public Health. In the freshman year there are four lectures given to provide some basic orientation predicated upon the fact that disease has a community as well as a personal aspect and that the social component of illness is an important force in the work of the doctor as well as in the life of the community.

The student is introduced to disease as a mass or community problem and to medicine as a social institution.

In the sophomore year there are a series of lectures. These cover the factors that are involved in causation of disease. The host factors, the environmental factors, and the various disease agents are inter-related. As a part of the host factors a series of lectures are devoted to the biological basis of genetics, genetic mechanisms, carrier states, and role of genetic constitution in pathogenesis of disease. During the first semester the course is correlated with bacteriology, and the various levels of application of preventive medicine to specific diseases are stressed with lecture and case presentation. During the second semester a series of lectures on epidemiological methods of investigation are given. The class is then divided into units for the practical discussions of the application of preventive medicine to case material.

During the clinical years a series of correlative clinics are carried out. The various departments contribute to these. In addition stress is placed on the principles in certain out patient clinic functions.

Psychiatry

The objectives of the undergraduate teaching program in the Department of Psychiatry are to: (a) Bring to the medical student the basic information which he requires to comprehend his role in the community as a physician, to understand his relationship with patients, to appreciate the impact of disease upon the patient and to understand the influence of the psychic processes. (b) Provide the student with the knowledge of interviewing techniques and psychotherapeutic skills which can be utilized in the general practice of medicine. Instruction begins in the first year with the class meeting for one hour a week throughout the year. The course, "Introduction to Human Development and Behavior" includes lectures, clinical demonstration of patients and small group discussions. During the second year psychiatric concepts are presented in a course called "Psychiatry and Disease" which presents in some detail the topography of the mind, the common mental mechanisms, the concept of the unconscious, and the effects of these various factors on disease. Psychiatric teaching is integrated with other disciplines in the course "Introduction to Clinical Medicine." Twelve lectures are presented dealing with psychosomatic medicine, and a total of 30 hours of small group instruction permits the students to become acquainted with and to practice interviewing techniques with patients. In the third year the student is assigned to the In-Patient Service of the Department of Psychiatry where he has an opportunity to come in contact with patients who have serious emotional disturbance. Emphasis is placed upon recognition and proper referral of seriously disturbed patients. Lectures

and demonstrations conducted during the first two quarters of the third year are devoted to psychiatric disorders with a review of symptomatology, etiology and treatment. Each senior student spends a total of 44 hours in one quarter in the Out-Patient facility of the Department of Psychiatry. The senior student under close supervision, conducts psychotherapeutic interviews and observes the psychotherapeutic efforts of a senior psychiatrist.

Specialty training in the field of psychiatry is offered professionally qualified physicians who have completed at least one year of internship. Completion of such training meets the requirements of the American Board of Psychiatry and Neurology. The major areas of residency training are the Psychiatric In-Patient Service, the Adult Out-Patient Clinic, Psychosomatic Medicine and the Durham Child Guidance Clinic.

Radiology

The student teaching schedule in roentgenology consists of a course in roentgen diagnosis and a course in therapeutic radiology. The first is offered during each scholastic quarter on Tuesday and Thursday of each week. The fundamental physics of x-ray is discussed, with the chief emphasis being placed upon the anatomical, pathological and physiological bases for the interpretation of x-ray films. The course is conducted in seminar fashion and no formal lectures are given. The students participate in and lead discussions with the instructor serving as the moderator. An attempt is made to acquaint the student with the aids of roentgenology in diagnostic problems. The correct use of x-rays in diagnosis is stressed.

Therapeutic radiology is given one hour weekly during each quarter. At these sessions the general problem of the treatment of benign, inflammatory and malignant lesions by x-ray and radium is discussed and the accepted views of the combination of these therapeutic agents with surgery is stressed. Representative cases are demonstrated, and the follow-up results are particularly stressed.

A limited number of senior students are permitted to attend routine film reading sessions in the Department of Radiology. They are also instructed in the fundamentals of fluoroscopic examinations and shown the many pitfalls of the inexperienced fluoroscopist.

X-ray conferences are scheduled with each specialty in the X-ray Conference room with weekly schedules. All x-ray cases on that service the preceding week are shown and briefly discussed for benefit of the house staff and attending students. At the present weekly conferences including the Ear, Nose and Throat, Orthopaedics, Neurosurgery, Thoracic surgery, Pediatrics, Cardiac, Gastro-intestinal, Urology are held and used as part of the teaching program. Tuesday and

Friday afternoons special x-ray conferences of x-ray pathology are held. X-ray Pathology conference 5 to 6 P.M. each Wednesday afternoon is given in the autopsy room.

Each Wednesday evening a conference is held by the members of the x-ray staff and visiting radiologists. Difficult cases are brought up for discussion and diagnosis.

A regional x-ray conference is held the last Thursday in each month, alternating with the University of North Carolina.

A complete radioisotope laboratory facility is available for diagnostic and therapeutic applications of radioisotopes. Radio-iodine is used routinely in the evaluation of thyroid function and in the treatment of hyperthyroidism and thyroid carcinoma. Radiophosphorus and radiogold are used in cancer therapy.

An investigative program using radioisotope labeled materials is concerned with normal and abnormal physiology of the gastro-intestinal tract. As a result of this, routine clinical tests using radioisotope labeled compounds are now in use in the evaluation of gastro-intestinal function. Other research programs in progress are concerned with cardiovascular, pulmonary and renal function, both in normal and abnormal patients.

A training program in the physics, radiation protection, routine handling, and application of radioisotopes in medicine is a part of the Radiology Resident's Program. This is available to a select few of the residents in other departments.

Surgery

Introduction to Surgical Technique. This course is given in the 5th quarter of the curriculum and is designed primarily for instruction and practice in the principles of asepsis and their application in surgery. This is accomplished through the medium of a series of major operative procedures on animals under conditions closely simulating those in human surgery. In the process, the student receives intensive training in the techniques fundamental to operative surgery and to the principles and practice of surgical anesthesia.

General Surgery. In the sixth quarter the students, during their course in physical diagnosis, attend clinics and demonstrations arranged to familiarize them with the techniques of examinations and diagnostic procedures used in general surgery and the surgical specialties. They also have the opportunity in this quarter to become familiar with certain basic principles in aseptic and atraumatic surgery and in isolation technique. The *junior* students, during their surgical quarter, attend ward rounds in surgery and the surgical specialties, act as clinical clerks on the wards and assist in the operative treatment of

patients assigned to them. The surgical students in the *senior* year attend ward rounds in general surgery and the surgical specialties in the mornings and assist in the surgical out-patient clinics in the afternoon. Also in groups of two for the proportionate time available they are assigned to the emergency division of the out-patient clinic where they assist in the diagnosis and care of urgent conditions.

Otolaryngological Division: An introductory course of instruction in the use of otolaryngological instruments, with a review of normal anatomy, is given to second year students in the sixth quarter. Senior students in the surgical quarter are assigned for two weeks to the service, during which time they devote their duties to out-patient, ward—both public and private—work, operating room and are available for all ward rounds. Eleven hours of didactic lectures are given in the Surgical quarter. A hearing-speech clinic has been initiated. Evaluation of hearing is being done with specialized equipment in sound treated rooms. Time consuming hearing tests, such as galvanic skin response, are done by special appointments.

Ophthalmological Division. In the second year as a part of the course in physical diagnosis students are instructed in the use and application of the ophthalmoscope, perimeter, and other diagnostic instruments commonly used in Ophthalmology. In the fourth year students are assigned for one week (40 hours) to the ophthalmic division where opportunity is provided for instruction in ophthalmic disease, in the treatment of ophthalmic emergencies, and in recognition of ophthalmic signs useful in the over-all evaluation of the patient in relation to systemic disease. Also fourth year students on election may attend weekly rounds in medical ophthalmoscopy and in neurophthalmology.

Orthopaedic Division. In the sixth quarter an introductory course is given. During the surgical quarters the junior and senior students attend weekly ward rounds of one hour each in orthopaedics and fractures. Students in their senior surgical quarter are assigned in rotation to the orthopaedic out-patient clinic. These students also attend orthopaedic staff rounds at 5:30 P.M. Mondays through Fridays. An elective course in the treatment of fractures, limited to three students, is offered during the junior and senior surgical quarters. An elective course in physical therapy is also offered during these quarters. Arrangements may be made for students who so desire to do research or experimental work. They may also attend the state orthopaedic clinics as held.

Urologic Division. In the sixth quarter, second-year students are given a course of lectures and practical demonstrations in urologic physical diagnosis in the normal individual. Ward rounds on urologic patients are given every Saturday at 8:30 A.M. for third- and fourth-

year students in their surgical quarter. Small groups are selected from the senior surgical group of students and assigned in rotation to the urologic department for concentrated study for a two week period. They spend all of their time working with the House Patients and Out-Patients in Urology Clinic. They attend all Urology Rounds, Staff Conferences and Journal Club Meetings. Rounds are given also every Wednesday afternoon at 4:00 P.M. for the students in their Surgical Quarter. The students assigned to Urology work with the Upper Staff every morning and the Upper and House Staff in the Urology Clinic in the afternoon. There is the closest association and constant supervision of these students by both the Upper and House Staff.

Division of Plastic, Maxillofacial, and Oral Surgery. Didactic lectures are given to both the third- and fourth-year students to familiarize them with the basic principles of plastic, reconstructive, and destructive procedures. Bedside ward rounds and demonstrations are held twice weekly to illustrate these basic phenomena of trauma, disease, and reconstruction. Fourth-year students work in the Plastic Surgical Clinic which meets daily, with special reference on Wednesday which is the Plastic Surgical and Oncology return or follow-up day. Opportunity is afforded interested students to observe moulage and cast work, cosmetic restoration of color, the making of prosthetic appliances, etc. The Oral Surgical Clinic has three dentists and oral surgeons in attendance and is in operation five and one-half days each week. Associated closely and allied with the plastic surgical service, is the Medical Speech Pathologist and Audiologist, who has charge of the Speech Correction Program.

The Division of Medical Speech Pathology will work in close cooperation with the Division of Plastic and Oral Surgery, the Division of Otolaryngology, and the Departments of Pediatrics and Psychiatry. Weekly lectures are given to familiarize students with the various types of speech defects and abnormalities which are encountered in both children and adults. The pre- and postoperative followup cleft palate patients are seen and evaluated each Wednesday afternoon in conjunction with the Plastic Surgical Clinic. Clinics will be arranged as desired with other departments. Speech instruction and therapy are given daily by appointment.

Neurosurgical Division. During all four quarters, separate weekly ward rounds are held for the junior and senior surgical groups. Emphasis in these rounds is placed upon the recognition of neurosurgical problems, followed by observation of the operative and post-operative procedures. Weekly x-ray and pathological conferences are held, and these may be attended by interested individuals. Tumor clinic conferences are held bi-monthly, on each second and third Thursday of the month.

Division of Thoracic Surgery. During the academic year ward rounds, lectures and demonstrations are held to acquaint the third- and fourth-year students with the principles and practice of surgery of the chest. The anatomy and physiology of the respiration and circulation are reviewed and their application to thoracic surgery is stressed. X-ray diagnosis is emphasized and frequent pathology conferences are held to give the students a well-rounded knowledge of the surgical diseases of the chest.

Dentistry. Second-year students, in the sixth quarter, are instructed in the principles of dentistry.

Division of Anesthesiology. Junior and senior students, are given a series of lectures by the medical anesthesiologists in the Amphitheatre during the surgical lecture hour. Following a brief history of anesthetic drugs, the response of the body to such drugs is discussed. The physiological basis of the reactions encountered in the operating room is stressed and the rational for choice of agents for various patients is presented. A six days' concentrated course of training in the administration of anesthetic agents is given to each senior medical student during the senior surgical quarter. These students observe and administer anesthetics under the supervision of staff anesthetists.

Legal Medicine Toxicology

This course embraces a discussion of the relation of physicians to legal criminal procedures, jurisdiction of the coroner and medical examiner, laws governing the dead human body, personal identity of the living, and the dead, the medicolegal autopsy, traumatic, injuries and fractures, rape, abortion, asphyxial death, homicidal, suicidal, and industrial poisoning, alcoholism, the examination of blood, stains, fibers, and the detection of malingering. This course is open to junior and senior students and is given in alternate years. Discussions of medicolegal problems for the house staff and senior students, and joint conferences of the medical and law students also are held.

Undergraduate Cancer Training Program

During the first quarter, a course in surgical pathology is available to interested senior students. Classes are held twice weekly; each class is two hours. The sessions are informal. Gross and microscopic materials with clinical abstracts are readily available. Clinico-pathological correlation is stressed throughout the course.

During the second and third quarters, weekly seminars are held on various phases of the tumor problem. Clinico-pathological correlation is stressed as the viewpoints of the clinician, radiologist, and patholo-

gist are presented. General practitioners, members of the clergy, the social service division, and nursing staff are invited to discuss certain aspects in the care of patients with neoplasms.

In addition, the Undergraduate Cancer Training Program staff participates in the teaching of neoplasia to the sophomore students. This is done as a supplementary program to the students as they are being taught the principles of neoplastic disease by the Department of Pathology. New material is presented to them, and here the clinico-pathological approach to the problem of neoplasia has special emphasis. In this phase of the program those regions of the body in which the frequency of tumors is highest are selected for study.

The Program, through its secretarial and social service personnel and its follow-up studies, is a valuable adjunct in the clinical training of the students. Contact is maintained with discharged patients and regularly scheduled appointments are made for their return visits to the various outpatient departments for periodic evaluation and indicated therapy. The program maintains an active tumor registry and, through the secretarial staff, this information is made available for study of particular phases of the tumor program.

A special feature of this teaching activity is the individual student project program. Twenty tumor study projects are planned for volunteer students, each project dealing with a particular problem in neoplasia. These projects are undertaken by students entering their third undergraduate year and continue through the fourth undergraduate year. This program is under the direction of the Coordinator, each student being guided in the accomplishment of his project by a member of the clinical staff who serves as his personal tutor.

Duke Hospital

Internships and Residencies

Straight internships of one year duration are available in Medicine, Surgery, Obstetrics-Gynecology, Pediatrics, Psychiatry and Pathology. Mixed internships are available in Obstetrics and Pediatrics. A stipend of \$25 per month is offered in Medicine, Surgery and Pediatrics plus room, board, laundry and uniforms. An allowance of \$12.50 is paid to married house officers in lieu of a room in the house staff quarters. Appointments are from July 1 through June 30, although special arrangements can be made with individual department heads.

Assistant Residencies and Residencies are available in the following services: internal medicine (allergy, cardiovascular diseases, dermatology-syphilology, gastroenterology, neurology, and pulmonary diseases), surgery-general (neurology-surgery, ophthalmology, otolaryngology, orthopedic surgery, plastic surgery, thoracic surgery, urology, oral surgery) pediatrics (pediatrics and obstetrics), obstetrics and gynecology (endocrinology), psychiatry, anesthesia, pathology, and radiology.

Application forms for all internships may be obtained by writing to the Superintendent, Duke Hospital, Durham, North Carolina. Graduates of any Class A medical school are eligible for internships. Appointments are open to women and to graduates of accredited foreign medical schools. Duke Hospital participates in the National Intern Matching Program, Inc.

After completion of an internship in Duke Hospital or in another acceptable hospital, a certain number may be appointed as assistant residents in the above listed specialties plus Biochemistry, the Student Health Service or as fellows of the Private Diagnostic Clinics at a salary of \$250 to \$800 per year plus maintenance. A smaller number may be eventually promoted to the residency in the above listed services at an annual salary of \$500 to \$1300 per year plus maintenance. Application should be made to the head of the department concerned.

The Hospital and School of Medicine are an integral part of the Duke University campus, and its educational, recreational and athletic facilities are available for the Resident Staff.

The Veteran's Hospital opened on April 6, 1953 and located within walking distance of Duke Hospital, is integrated with the Duke Hospital house staff training program. House officers on certain services may be assigned to either hospital for parts of a year. Administra-

tively, the hospitals are separate but educationally they are closely integrated. The Medical Staff of the Veteran's Hospital is supervised by a Dean's Committee composed of faculty members of the Duke School of Medicine. Certification of training is provided by Duke Hospital.

Postgraduate Study

Graduates in medicine are welcomed at the various specialty clinics in medicine, surgery, obstetrics and other specialties, which are held from 9:30 A.M. to 12:30 P.M. each morning except Sunday. Ward-rounds are given in medicine in the mornings, and general out-patient clinics are in session in the afternoons. Each Thursday morning more formal exercises are offered, and all practicing physicians are welcomed. These exercises begin at 9:30 A.M. with an amphitheatre clinic or a lecture in the various specialties, followed by a clinicopathological conference and ending with medical staff rounds. These three hours of instruction are designed for students, house staff and visiting physicians and have been approved for category I credit by the American Academy of General Practice. Physicians are urged to register at the Dean's Office each time they come so that proper credit may be given, and also they may obtain their guest tickets for lunch. In addition to these opportunities for study, short-term attendance in the various departments can be arranged. This consists of ward-rounds, attendance at lectures and demonstrations and visits and instructions in the out-patient clinics. Further information can be obtained from the Director of Postgraduate Education, Duke Hospital, or by writing directly to the Chairman of the Department in which any physician desires to work.

Throughout the year, there are given concentrated postgraduate courses usually lasting two to four days. These range from special subjects to a general review. Anyone who wishes to be placed on the mailing list should communicate with the Director of Postgraduate Medical Education, Box 3088, Duke Hospital, Durham, N. C.

Paramedical Courses at Duke Hospital

Dietetics

In addition to the dietetic training of the students of the Schools of Medicine and Nursing, fourteen dietetic interns may be admitted to the Program of Dietetics and given the certificate of graduate dietitian after the successful completion of one year's internship. The entrance requirements are a Bachelor's degree from an approved university or college, with majors in nutrition and institutional management, and the courses in chemistry, biology, social science, and education recommended by the American Dietetic Association. The course for dietetic interns provides instruction in all phases of hospital and institutional dietetics, including experience from the buying and storage of food to its service to the patients according to the physician's orders. Interns may apply some of their time in securing graduate credit.

The course starts the first of September. All students pay a registration fee of \$10 at the time of appointments. Additional fees are charged if the intern takes additional work in the University for an advanced credit. Maintenance is provided. More detailed information and application blanks may be obtained from the Professor of Dietetics, Duke University School of Dietetics, Durham, N. C.

Hospital Administration

Eight internships in hospital administration leading to a certificate are available to university graduates whose character, tact, and ability for leadership are good, and whose academic standing is high. These internships are of two years' duration and pay a small salary in addition to room, board, and laundry. Vacations of two weeks are allowed during each year of internship.

The instruction is practical rather than theoretical in emphasis. The interns are rotated through seven different assistant administrative positions in the Hospital. There is also a weekly seminar lasting two hours and two classes lasting one hour each during the week.

The interns may register in the Graduate School of Duke University, and receive the A.M. degree after the successful completion of a thesis and twenty-four semester hours of university courses in various fields. This additional work will add one year to the program. Fur-

ther information may be obtained by writing to the Superintendent, Duke Hospital, Durham, N. C.

Medical Art and Illustration

The function of this Division is to produce, for staff members allied to medicine, visual aids by way of various art and photographic methods. These visual aids are used to enhance the medical records and to aid in research and education. Services offered by this Division are: 1. Medical Art: Illustrations, by means of various artistic techniques, depicting anything perceptible to the eye, the existing but unseen and even the theoretical, as well as mechanical drawings, diagram, charts, graphs, lettering, casts, models, exhibits, etc. 2. Medical Photography: Illustrations of anything to which available photographic equipment will respond. This Division produces still and motion pictures, microphotographs, pictures of the retinae, photographic copies, film strips, lantern slides, enlargements and contact prints. Services offered directly for the patient's benefit are: Production of various types of anatomical prostheses and instruction in the use of opaque cosmetics. Facilities for individual training in specific techniques or methods employed by this Division are available. No academic credit is given. Prerequisites, tuition, time and type of training are determined by the Chairman of this Division. No regular courses of instruction in medical art and photography or their allied fields are offered.

Medical Record Library

A twelve months' course for the training of medical record librarians which has been given full approval of the American Association of Medical Record Librarians and the American Medical Association, includes three months of classes and nine months of internship with rotation through inter- and extra-departmental stations. Applicants are judged individually for eligibility, and education, training, and experience are all taken into consideration. The curriculum provides instruction in the theory of medical record library science, and an introduction to anatomy, physiology, pathology, medical and operative terminology, and medical diction. Instruction is given by members of the faculty of the School of Medicine, with special lectures on hospital management and correlation of various hospital departments, as well as seminars on legal aspects and administrative uses of medical case records. Internship includes application of class work in actual practice and covers all phases of medical record library work. The course starts in October. The tuition fee is \$175.00 and does not include maintenance. A certificate is awarded upon successful com-

pletion of the course. Applications may be made to the Medical Record Librarian, Box 3307, Duke Hospital, Durham, N. C.

Medical Technology

The course in laboratory technique, which includes training in blood chemistry, clinical microscopy, bacteriology, serology, basal metabolism, etc., is approved by the Board of Schools of Medical Technology of the American Society of Clinical Pathologists. The course lasts twenty-one months, the next class beginning September, 1957. The registration fee is \$300 which includes tuition, student health and diploma fee for the entire course. There are no additional fees except for breakage. Other student activity fees are optional. The students live in town at their own expense. A minimum of two years of approved college work is required. The degree of B.S. in Medical Technology is awarded upon successful completion of the course. Information as to the specific requirements may be obtained from Dr. Haywood M. Taylor, Duke Hospital, Durham, North Carolina.

Nurse Anesthesia

Courses available to graduate nurses include an eighteen months' course for nurses who have had no experience in anesthesia, and a nine to twelve months' course for nurses who have had five years of practical experience but no formal training in the specialty. Instruction embraces the theoretical aspects and clinical application of all drugs and techniques in accepted usage. The program is divided into quarters. The major part of the basic theoretical instruction is given during the first three quarters. After a pre-clinical period of eight weeks, clinical practice runs parallel with the theoretical program. One class is accepted annually and enrolled on January 15. All appointments for the current year are made by September 1 of the preceding year. Graduates of these courses are eligible to take the examination given by the American Association of Nurse Anesthetists. Tuition is \$150.00 and \$100.00 respectively. Additional information concerning these programs for nurses may be obtained from Mary B. Campbell, R.N., Box 3094, Duke Hospital, Durham, North Carolina.

Nursing

School of Nursing. The program offered in the undergraduate school of nursing leads to the degree of Bachelor of Science in Nursing after four years of study. Further information concerning the School of Nursing may be obtained by writing to the Dean of the School of Nursing, Hanes House, Duke University, Durham, North Carolina.

Practical Nursing Division of the Vocational Education Department of the Durham City Schools, Duke Unit. After three months of classroom instruction at the Hillside High School, nine months are spent in classes and practical training at Duke Hospital. At the completion of this course, the student receives a certificate in practical nursing and is eligible for licensure as a practical nurse in North Carolina.

Occupational Therapy

Occupational Therapy is available to any patient during his hospitalization, or as an out-patient, following referral by his physician. Occupational Therapy assists in teaching and consulting physical therapy, nursing, and medical students in the pertinent aspects of occupational therapy.

None of the academic course work leading to Registration in occupational therapy is offered in the Department. However, occupational therapy students from accredited schools receive their 2 months general medical and surgical affiliation at Duke.

Further information may be obtained from the Division of Occupational Therapy, Duke Hospital, Durham, N. C.

Physical Therapy

Beginning in October, a fifteen months' approved course in physical therapy is offered for men and women graduates of accredited colleges who can meet the following requirements:

Biological Sciences (excluding Botany).....	8 semester hours
Physics	4 semester hours
Chemistry	4 semester hours
Psychology	6 semester hours
Mathematics including Trigonometry	

Selected applicants who have completed ninety college semester hours including the above science prerequisites may also be considered. Enrollment is limited to 24 students.

The curriculum provides instruction in anatomy, physiology, pathology, kinesiology, personality and physical handicap, the use of physical agents and assistive devices, tests and measurements, therapeutic exercise, physical therapy in clinical medicine and rehabilitation. Clinical subjects are taught by members of the faculty of the School of Medicine. Clinical experience is provided under the direction of qualified physical therapists at Duke Hospital and affiliating institutions. This course starts in October. The tuition fee is \$450 plus \$35 for medical fee, and does not include maintenance. A certificate is awarded upon successful completion of the course, which

qualifies students for membership in the American Physical Therapy Association and to take national and state registry and licensing examinations.

A total credit of 20 hours, allocated as follows, may be applied toward a baccalaureate degree provided the student can meet the University requirements: Medical Science, M109 (Anatomy), 8 s.h.; Medical Science M203 (Physiology), 6 s.h.; Psychology S232, 3 s.h.; Kinesiology 116, 3 s.h.

Further information and application blanks may be obtained from the Division of Physical Therapy, Box 3403, Duke Hospital, Durham, North Carolina.

Prosthetic and Orthopedic Appliances

The function of this department is to produce for the medical profession prosthesis and orthopedic appliances. Facilities for individual training in specific techniques or methods employed by this department are available. At the completion of four years' training you are eligible to take the examination of American Board of Certification.

Social Service

Medical and psychiatric social case work service is available to all patients who have social, inter-personal or emotional problems related to their illness.

The Department assists in teaching the students of the Schools of Medicine and Nursing the social aspects of illness, community resources and the function of the caseworker through scheduled classes, consultation and demonstration. In addition, the Department serves as an agency for supervised field work for students of the Graduate School of Social Work of the University of North Carolina and Atlanta University School of Social Work. Further information concerning training for advanced students may be obtained from the Social Service Department, Duke Hospital, Durham, North Carolina.

X-Ray Technology

The course in x-ray technology offers to qualified students a one-year training program in radiographic and x-ray therapy technic. Students are given thorough instruction in the technical aspects of radiography. They are also given instructions in assisting radiologist in x-ray and radium therapy and in the handling of radio-isotopes. Courses in anatomy, physiology, darkroom chemistry and procedures, fundamentals of radiographic exposure, positioning of patients, gen-

eral and special techniques, general and radiographic physics and medical terminology are conducted by registered technician instructors with the assistance of radiologists and other physicians on the staff of the Hospital. The course is approved by the Council on Medical Education of the American Medical Association, The American Registry of X-ray Technicians and The American Society of X-ray Technicians. Students are admitted in September and February. Applications should be filed by June 1 for the September class and October 1 for the February class. Candidates for admission must be between the ages of 18 to 25, and graduates of approved high schools. Each class is limited to approximately seven students. Applicants should rank in the upper third of their class. A personal interview is required of each prospective student. No maintenance is provided by the Hospital, therefore students live in town at their own expense. A certificate is awarded to those who successfully complete the course. All applications and requests for further information should be addressed to: Professor of Radiology, Duke Hospital, Durham, N. C.

THE SCHOOL OF NURSING

Fall Semester begins September 19, 1957

Spring Semester begins January 30, 1958

General Information



The School of Nursing offers a four-year program leading to the degree of Bachelor of Science in Nursing. Graduates from this program are eligible to take the State Board Examination for the title of Registered Nurse.

Through changing generations of Duke students the objective has been to encourage each individual to achieve to the extent of his capacities an understanding and an appreciation of the world in which he lives, his relationship to it, his opportunities and responsibilities. As one of the schools within the University system, the School of Nursing shares the advantages of the wider community and contributes to the achievement of this objective. At the same time it offers the special opportunities and responsibilities which belong to its professional students.

The School of Nursing bases its philosophy of education for professional nursing on the belief that the student brings to the school a sound basis for further academic preparation, an understanding of democratic values, an appreciation of the inherent worth of individuals, and a sincere desire to learn nursing. Through the programs of the school, the student is offered learning experiences which will enhance her personal qualities, extend her experiences in group participation, and provide opportunities for acquiring knowledge for applying principles and for practicing skills necessary for effective nursing in our changing and complex society.

The course of study leading to the Bachelor of Science in Nursing degree is planned for one academic year plus six weeks in Summer Session and three calendar years. In this course the student gains a broad understanding of the cultural background of civilization and of her relationship to it, and a foundation for the appreciation and utilization of artistic and aesthetic values. She acquires a foundation in the biological sciences on which to build fundamental concepts of the scientific principles underlying many nursing techniques. She develops insight into the implications of the social factors which affect the patient in his reaction to illness or which handicap and modify his return to health, and acquires some knowledge of the resources available to help solve problems arising in these areas. She acquires a basic understanding of the broader field of public well-being and learns to contribute toward the achievement of a high standard of family and community health.

History

The School of Nursing of Duke University was established in 1931 in association with the School of Medicine of the University and Duke Hospital through the gift of the late James B. Duke. The School of Nursing is a member of the Committee on Health Affairs which promotes the common interests of the Medical School, School of Nursing, and Duke Hospital. A curriculum Committee, appointed by the President with representation from the administration of the University, the undergraduate colleges, the Medical School and the School of Nursing supervises the curriculum of the School of Nursing.

Facilities

The facilities for instruction include the facilities available in the undergraduate, professional, and graduate schools and colleges of Duke University and the clinical facilities of Duke Hospital and of the North Carolina Cerebral Palsy Hospital. The facilities of the Veterans Hospital in Durham may be made available at some future time.

In a wing of Hanes House are located the administrative offices of the School of Nursing, a large classroom seating 100 persons and equipped with audio-visual aids; a small classroom seating 50 persons and equipped with a screen and movie projector, a nursing arts laboratory with equipment for nursing practice for sixteen students, a conference room for faculty committees, small discussion groups and student council meetings. The School of Nursing also uses the laboratories of the Medical School for courses in science and classrooms in the hospital for clinical nursing courses.

A reference library of 3,841 books and periodicals of special interest to students majoring in nursing is located in Hanes House. Students may use the general libraries on the East and West Campuses and the Duke Hospital Library. A collection of visual aids including films is being assembled with an index in the library for the use of students and instructors in the School of Nursing.

Duke Hospital has every modern convenience for the diagnosis, proper nursing care, welfare and comfort of the patients including 670 hospital beds, 30 bassinets, a large public out-patient department, a large private diagnostic clinic with offices and examining rooms for the doctors who serve on the staff of the hospital. There are very close relationships established between the hospital and the Health Departments in North Carolina. A system for referral of patients to the nursing service of the Health Departments has been established between the supervisors of the nursing service in the hospital and the nursing service of the Health Department.

The beds in Duke Hospital are assigned to the various services as

follows: Medicine, including dermatology and neurology, has 195; surgery, including urology, otolaryngology, ophthalmology, and orthopaedics, 325; obstetrics, 37; and 30 bassinets; neuropsychiatry 30; and pediatrics, 83. There are 300 beds in private and semiprivate rooms included in the figures above; 19 air-conditioned operating rooms, 2 obstetric delivery rooms. Except for emergencies, all patients are admitted to the hospital from either the out-patient clinic or the private diagnostic clinic.

The hospital has been approved for internships and residencies by the Council on Medical Education and Hospitals of the American Medical Association and is approved by the Joint Commission on Accreditation of Hospitals.

The out-patient department has an average of 350 visits per day. All services including psychiatry carry on an active program in the out-patient departments. Students are assigned to the out-patient department during their program in the School of Nursing. The first assignment is in the first year, to give the student some knowledge of the background of her patients; subsequent assignments are planned concurrently with the experience on each service.

The Summer Session

The programs in the School of Nursing include courses in the Summer Session each year. Students in the School of Nursing have their courses approved in the School of Nursing and pre-register with the Summer Session office. Students from other colleges and universities who are admitted to the School of Nursing with advanced standing are expected to enroll in the Summer Session to make up deficiencies. Arrangements for registration are made through the office of the Dean of the School of Nursing.

The Summer Session of 1957 will include two terms: Term I, June 11 to July 17, Term II, July 19 to August 24. By attending both terms it is possible for a student to earn as many as twelve semester hours of credit.

While the basic purpose of the Summer Session is to serve the academic and the professional requirements of those who are interested in their own educational advancement, the University recognizes the need of, and provides for, a varied recreation program both athletic and social.

University fees are charged at the rate of \$15 per semester hour for those admitted with advanced standing. Board at Duke Hospital is \$10.00 per week per person, room is \$5.00 per week for each occupant of a double room, and laundry is \$0.50 a week. A bill is sent to all pre-registered students to permit payment in advance.

Awards

THE FLORENCE NIGHTINGALE PLAQUE: The Florence Nightingale plaque is awarded to a graduating student by the Alumnae Association for leadership, scholarship and nursing skill.

THE MOSELEY AWARD: The Moseley Award of \$25.00 is given to the student in the senior class who has shown the most skill in Nursing Arts throughout her program in the School of Nursing.

Student Government Association

The purpose of this organization is to regulate all matters pertaining to the life of women of Duke University School of Nursing not under the jurisdiction of the faculty; to increase a sense of individual responsibility; and to cooperate with the faculty in creating and maintaining high ideals for the nurses of the University.

THE HONOR SYSTEM: The purpose of the Honor System is to secure the cooperation of the student body in maintaining honorable conduct in all relations of student, professional and social life. It applies to every student in the School of Nursing. The Honor System is a vital directive force in all phases of each student's life and is a major working part of the Student Government Association.

Santa Filomena

Santa Filomena, the Senior Honorary of the Duke University School of Nursing, was organized in April, 1944, under the sponsorship of the 1943 class. The purpose of this organization is to recognize achievement and promote leadership.

The members are chosen from the rising Senior Class and are publicly tapped by the old members at the first meeting of the SGA in their senior year, the number chosen not exceeding nine or being less than five. Each candidate must show recognized qualities of leadership or must have made some contribution toward the betterment of the School of Nursing. She must have demonstrated superior nursing abilities and her scholastic record must be C or above throughout her first two years.

Santa Filomena strives for better interclass relations, and to promote better nursing and higher nursing standards. The specific objectives are chosen by the members each year. All proceedings of the meetings of this organization are held in secrecy as are all ceremonies except the public tapping of the new members. The Santa Filomena's flower is the white lily and the members wear a small gold Florence Nightingale lamp.

Admission



Candidates may qualify for admission as members of the freshman class or as students with advanced standing. Since the enrollment is limited, the Committee on Admissions selects students who, in its judgment, are best qualified to benefit from the educational advantages which the school offers. The Committee bases its decision on the academic record of the candidate, on test scores, and on satisfactory evidence of good character and general fitness for college life at Duke. A visit to the campus for a personal interview with members of the faculty is of material benefit to the candidate and the Committee. The Admissions Committee must have on file the records indicating the fulfillment of the following requirements before considering an applicant.

1. Graduation from high school with fifteen units of credit as indicated.
2. Aptitude tests.
3. Three recommendations.
4. Interviews.
5. Transcript of college courses for those who have attended college.

Specific Requirements

1. All applicants for admission to the School of Nursing must present at least fifteen acceptable units of secondary school credit. A unit of credit is allowed for a course of study pursued throughout an academic year at an accredited secondary school, if the course has been completed satisfactorily.

1. Twelve units must be in English, foreign language, history and social studies, mathematics, and natural science; and must include:
 - (a) English—3 units.
 - (b) Algebra—1 unit.
 - (c) Plane geometry—1 unit.
2. The three remaining units are elective and may be selected from those subjects for which the school allows credit toward graduation; but it is recommended that they also be selected from the five subject fields listed above.

Other units offered in subjects not included in this list will be considered for acceptance on the basis of full statements transmitted with the applicant's record from the school recommending her.

II. Satisfactory scores on a battery of aptitude tests, either the Scholastic Aptitude Test or the program of tests administered by Duke University.

III. Three recommendations, two of which must come from recent high school or college instructors.

IV. Interviews with two members of the Duke University School of Nursing faculty, whenever possible.

V. Evidence of good health will be requested after the applicant is considered for acceptance. Final acceptance will be contingent on a complete physical examination given at Duke Hospital during the Orientation Period. This examination also includes a chest x-ray, blood and urine studies and skin tests.

ADMISSION TO ADVANCED STANDING IN THE SCHOOL OF NURSING: An applicant for advanced standing must have fulfilled the equivalent of the requirements for admission, must present official certificates of all work completed in other institutions, and must have an honorable dismissal from each institution previously attended. Advanced standing candidates who have previously taken the Scholastic Aptitude Test of the College Entrance Examination Board should request the Board to send a report of their test scores to the Director of Admissions. All others may be advised to take the Scholastic Aptitude Test or the program of tests administered by the Duke University Bureau of Testing and Guidance, as recommended for freshman candidates. Credit for work completed will be determined in relation to the curriculum requirements of the School of Nursing. Applicants admitted with advanced standing to the second year may make up deficiencies for admission by attending the Summer Session.

Graduate nurses may be admitted by transfer into the basic degree program provided they meet the admission requirements. In addition, selection will also be based on previous performance in Nursing, as well as on satisfactory results on the Graduate Nurse Qualifying Examination.

Applicants for advanced standing in the School of Nursing should present, as far as possible, subjects corresponding to those required by the School. They may not, during their first semester, register for more than the minimum number of hours required of the class which they enter, except by permission of the Dean of the School of Nursing.

Transfer credits are tentatively evaluated pending the completion of two semesters of work in residence. To validate the total provi-

sional transfer credits the student must earn at least an average of C in a normal load of work. Transfer grades of C or above are rated at two quality points per semester hour when validated. Courses in which grades of less than C have been earned are not acceptable for transfer credit.

ADMISSION PROCEDURE: Application for admission should be made to the School of Nursing, Duke University, Durham, North Carolina. Application forms and instructions will be sent to the candidate. It is the responsibility of the candidate to see that these forms are properly executed and, together with other requested material, sent promptly to the Office of Admissions.

Application prior to the final year of the secondary school course is not required. Formal steps looking toward admission should be initiated, however, early in the senior year and not later than February 1. Candidates for admission to the School of Nursing normally will receive notification of the decision of the Committee on Admissions by May 1.

READMISSION OF FORMER STUDENTS: A student who, following withdrawal from college, desires to return should apply to the Committee on Admissions. When applying for readmission the student should make a detailed statement of his or her activities since leaving Duke University.

The maximum amount of credit acceptable from a junior college is 60 semester hours, exclusive of physical education. No credit is given for work completed by correspondence, and credit for no more than six semester hours is allowed for extension courses. Any extension work accepted must be approved through the dean.

Financial Information and Living Accommodations



FEES paid by students and nursing services of the students to the hospital cover only a part of the cost of their instruction and maintenance and the operation of the University. Income from endowment and contributions from alumni, alumnae, and other public-spirited men and women meet the balance.

Fees and Estimated Expenses

A registration fee of \$20.00 is required of all new students. This fee is payable only once; it is not refundable. The general fee is in lieu of special fees usually charged for matriculation, use of laboratories, student health service, commencement, etc. One-half of the tuition and general fees are payable at the beginning of each semester.

	<i>First Year</i>	<i>Summer Session 6 Weeks</i>	<i>Second Year</i>	<i>Third Year</i>	<i>Fourth Year</i>
Tuition	\$ 650.00		\$ 350.00	\$350.00	\$350.00
General Fee	150.00		75.00	75.00	75.00
Room Rent	210.00	\$ 31.50	210.00		
Board	400.00	60.00	400.00		
Laundry	20.00	3.00	20.00		
Books	40.00	10.00	40.00	40.00	10.00
Activities	15.00		15.00	15.00	15.00
Uniform		79.92			13.70
Room Key Deposit	1.00				
	<u>\$1,486.00</u>	<u>\$184.42</u>	<u>\$1,110.00</u>	<u>\$480.00</u>	<u>\$463.70</u>

A student will not attend classes unless she has complied with all regulations concerning registration and payment of charges for the term.

Payment of uniforms is made directly to the uniform company. Each student is responsible for payment of necessary replacements. After the second year, Duke Hospital provides board, room (double-room occupancy) and laundry in return for nursing service which the student contributes during her assignment in the hospital.

Students may have their bills sent to parents or guardians provided the Treasurer has been notified in writing with sufficient antecedence. Failure of a student or of a parent or guardian to pay bills on the dates scheduled will debar the student from class attendance until her account is settled in full; subsequent withdrawal does not entitle her

to a refund. A student is not considered as a candidate for graduation unless she has settled with the Treasurer for all her indebtedness to the University. A student who has not settled her bills with the Treasurer is not allowed to stand the final examinations of the specific term.

Refunds of tuition and other fees are made to students who withdraw within 14 days after the beginning of the semester. On and after the fifteenth day all fees are considered as earned and no refunds are made.

Students are entitled to one transcript free of charge. Additional copies are supplied at \$1.00 each. Records are not released when the Treasurer's office reports an unpaid account.

Scholarships and Loans

SCHOLARSHIP AWARDS: A limited number of scholarships are awarded annually to students who evidence qualities which might predict excellence in Nursing. Detailed information on scholarships will be sent on request.

LOANS: A number of loan funds have been established for the benefit of the students of Duke University. The most important and largest is the Angier B. Duke Memorial Student Loan Fund, which is administered through an advisory committee of officers of the University. The amount available to be loaned depends upon the income from investments and on the amount repaid on loans previously made to students. The same committee of officers administers the other endowed loan funds of the University.

The committee in approving loans selects those students who, from the standpoint of character, scholastic attainment, personality and degree of financial need, are deserving of consideration.

Residences

Students are housed in residences located near the hospital. Rooms are adequately equipped with blankets and linen, making further provision by the student unnecessary. Life in the dormitories is under the regulations established by the Student Government Association with advice from the faculty. The dormitories Hanes House and Hanes House Annex are planned for comfortable living. A Student Handbook including dormitory regulations is issued to each student.

Students in the basic degree program pay room rental during the first two years. During the first academic year the rental charge for a single room is \$130.00 per semester. The rental charge for a double room is \$105.00 per person per semester. The charge for laundry for

one semester is \$10.00. The rental charges for Summer Session are listed in the Summer Session Bulletin.

Board during the first year may be secured at the hospital for \$200.00 for the semester and as described under Summer Session for the first summer. Students may prefer to eat at the University cafeterias with multiple choice menus. The cost for the academic year ranges from \$375.00 to \$500.00 depending on the taste of the individual. In the Men's Graduate Center near Hanes House is a cafeteria with multiple choice menus and a Coffee Lounge where sodas and sandwiches are served from 11:30 A.M. to 11:00 P.M. This is closed on Sunday.

During the second year, the charges for room and laundry are for the calendar year payable in equal payments at the beginning of the fall and spring semesters. If a student elects to live off campus for any one term of the second year, charges for subsequent terms will be made at the weekly rate as described for Summer Session.

Board (double-room occupancy) and laundry is provided by Duke Hospital for students after the second year. Charges for a single room will be made at the rate of \$25.00 per term.

General Regulations



Orientation Program

ALL FRESHMEN and transfer students are required to participate in the activities of Orientation Week. The program includes general ability, achievement, and placement tests, orientation lectures, physical examinations, social events, special religious services, registration, and enrollment. New students who miss the whole or a part of the Orientation Program place themselves at a serious disadvantage at the very outset of their college career.

Registration

Students who register in either semester at a date later than that prescribed must pay to the Treasurer a fee of \$5.00. They are counted as absent in the work they have missed in the courses to which they are admitted, and these absences carry the same penalty as do other absences from the course. Changes in courses for reasons not arising within the University require a payment of \$1.00 for each change made. No course may be elected later than one week after the opening of the semester, and no student may be admitted to any class without an official enrollment.

Health Regulations

Before admission to the School of Nursing, a student is required to have a physical examination by the family physician and to be immunized against typhoid fever, diphtheria, tetanus and smallpox. Physical defects, such as defective vision, dental needs, etc., must be corrected before admission to the School.

Before final acceptance, each student is required to pass a physical examination given at the School of Nursing during Orientation Week. Students whose condition needs further observation may be admitted tentatively, but must cancel their application if later findings prove them physically unfit for nursing.

Health Program

The School has general supervision of the student's health. Under the health program, all regularly matriculated students and graduate

nurses who are enrolled full-time in the Basic Degree Program receive full medical and surgical care while in the School.

1. **Physical Examination:** Upon admission each student receives a complete physical examination including a chest x-ray. Thereafter, the physical examination is repeated annually; the chest x-ray semi-annually.

2. **Health Office Care:** A health office is maintained in Hanes House for the purpose of treating any sick student; a physician is in attendance for consultation. Drugs, dressings, laboratory tests and x-rays are provided as needed.

3. **Infirmary Care:** An infirmary is available in the hospital for any non-ambulatory sick student. Admission to the infirmary is arranged through the health office. Hospitalization in the infirmary includes staff nursing, drugs, dressings, x-ray and laboratory tests as needed.

If the student is covered by insurance providing hospital, medical or surgical benefits, the coverage shall be applied to the cost of her care.

First and second year students, and graduate nurses enrolled in the Basic Degree Program who do not secure maintenance provided by the hospital will be required to pay for board while hospitalized. Hospital insurance maintenance may be used to cover this service.

4. **Exceptions:** The health program does not cover private duty nursing, refraction of eyes, treatment of teeth, all chronic or pre-existing conditions such as diseased tonsils, hernias, pilonidal cysts, chronic skin conditions, endocrine disturbances; elective surgery, braces or any orthopaedic appliances; accidents or illness occurring during vacations or while off the campus. Blood used for transfusions must be paid for or replaced.

5. **Psychiatric Consultation:** Advisory consultation with a psychiatrist can be arranged through the Dean of Nursing at no expense to the student. Further psychotherapeutic interviews are not included in the program.

6. **Sick Leave:** Students are allowed a total of twenty-one days sick leave during the three years of the clinical part of the program.

7. **Student health insurance** may be secured through the University at a minimal rate.

Grading

Grades are reported to indicate the following:

(1) **Passed.** A, B, C, and D are all passing grades. The letters are intended to indicate the following quality of work. A, exceptional; B, superior; C, medium; D, passing.

(2) **Failed.** A grade of F indicated that the student has failed the

course, and in order to receive credit for the course he must repeat the work in class.

(3) Incomplete. (a) A grade of I may be reported by the instructor if for any reason she is unable to report the final grade at the regular time. (b) Incomplete courses must be completed before the close of the succeeding semester; otherwise the I is recorded as F, and the course must be repeated in class if the student is to receive credit for it.

(4) Absent from final examination. (a) The grade X indicates that the student was absent from the regularly scheduled examination. (b) If absence has been excused by the dean the student may take the examination as arranged by the instructor concerned. (c) If absence from the examination is not excused by the dean, the grade for the course concerned is recorded as F. (d) A student with an X grade who has not obtained a passing grade before the end of the semester following that in which the X was incurred is regarded as having failed in the course concerned and must repeat the work in class in order to receive credit.

Leave of Absence

A leave of absence may be granted to a student for a period not to exceed one semester, with the approval of the faculty.

Readmission

Students who are absent for more than one month may be readmitted to the same or to a succeeding class on the decision of the faculty.

Dismissal

The faculty of the School of Nursing may, at any time, place a student on probation or release her from the School if, in its opinion, she does not demonstrate the qualifications necessary for the profession. A student of the freshman class to remain in the school must pass at least six semester hours of work in her first semester and eighteen semester hours with 22 quality points in her first academic year.

Requirements for Degree



The School of Nursing offers a program leading to the degree which is planned to cover a period of four years; one academic year, one summer term and three calendar years. At the completion of this program, the student receives the degree of Bachelor of Science in Nursing and is then eligible for the examinations given by the North Carolina State Board of Nurse Examiners. The School is fully approved by the North Carolina Board of Nurse Registration and Nursing Education.

To fulfill the requirements for the degree of Bachelor of Science in Nursing, a student must complete the program with a C average, must complete 127 semester hours as outlined below, earn 250 quality points, exclusive of Physical Education, and show proficiency in the practice of nursing.

The requirements for the degree of Bachelor of Science in Nursing are based on the principle that the student will derive the maximum benefit if the program includes a broad distribution of studies among representative fields.

For graduation with the degree of Bachelor of Science in Nursing, the following course work or equivalents must be completed.

UNIFORM COURSE REQUIREMENTS	S.H.
English	6
Natural and Biological Science	23
Religion	6
Social Science and History	24
Elective (Literature, Music, Art Philosophy preferred)	6
Physical Education	2
Major (Nursing and related work).....	60
Total	<u>127</u>

These requirements are described in detail below.

ENGLISH, 6 s.h.—This requirement is met by the completion of English 1-2. Students who demonstrate proficiency in English usage may be allowed to substitute 55 or 56 for English 1.

NATURAL AND BIOLOGICAL SCIENCE, 23 s.h.—To satisfy this requirement a student must complete laboratory courses in General Chemistry (3 s.h.), Physiological Chemistry (3 s.h.), Zoology (8 s.h.), Anatomy and Physiology (6 s.h.), and Microbiology (3 s.h.).

RELIGION, 6 s.h.—To meet this requirement 6 semester hours must be chosen from Religion 1, 2, 51, 52, 91, 93, 94, 101, 103, 104, 114, 130, 132, 181, 182.

SOCIAL SCIENCE AND HISTORY, 24 s.h.—To satisfy this requirement students must take Education 88 and 118, Psychology 116 and Sociology 91, 92 and N151.

The remaining 6 s.h. may be selected from History 1-2 or 51-52 and Political Science 11-12 or 61-62 (Students who do not present for entrance 2 acceptable units of History must select History).

LITERATURE, MUSIC, ART, AND PHILOSOPHY, 6 s.h.—This requirement can be satisfied by a total of 6 semester hours in courses in English or American literature, foreign literature courses numbered above 100, literature courses in translation, courses in aesthetics, art, music, and courses in Philosophy (except 48, 103, 104, 109, 199).

PHYSICAL EDUCATION, 2 s.h.—In the School of Nursing, Physical Education is required during the first year and must be completed by the end of the first year.

MAJOR AND RELATED WORK, 60 s.h.—This requirement is met by completing courses in the School of Nursing in accordance with the regulations described.

The work is divided as follows:

FIRST YEAR

<i>First Semester</i>			S.H.	<i>Second Semester</i>			S.H.
Eng	1	Freshman Composition....	3	Eng	2	Freshman Composition...	3
Hist	1	Historical Background of or the World Today.....	3	Hist	2	Historical Background of or the World Today.....	
Pol Sc	11	The American System of Government.....	3	Pol Sc	12	The American System of Government.....	3
Relig	1	The English Bible.....		Relig	2	The English Bible.....	
or				or			
Elective		(Art, Music or Philosophy)	3	Elective		(Art, Music or Philosophy)	3
N	1	Orientation to the Health Field.....	2	Micro	4	Microbiology.....	3
Zool	1	General Zoology.....	4	N	2	Introduction to Nursing...	1
		Physical Education.....	1	Zool	2	General Zoology.....	4
						Physical Education.....	1
			16				18

SUMMER SESSION (6 WEEKS)

<i>First Term</i>			S.H.
Chem	50	Chemistry.....	3
Ed	88	Educational Psychology....	3
			6

SECOND YEAR

<i>First Semester</i>			S.H.	<i>Second Semester</i>			S.H.
Anat	51	Anatomy.....	3	N	92	Fundamentals of Nursing..	6
Phys	51	Physiology.....	3	Nutr	53	Nutrition.....	3
Chem	51	Physiological Chemistry....	3	Ed	118	Educational Psychology— Developmental.....	3
N	91	Fundamentals of Nursing...	6	Soc	92	General Sociology.....	3
Soc	91	General Sociology.....	3				
			18				15

SUMMER SESSION

<i>First Term (6 weeks)</i>			S.H.	<i>Second Term</i>			S.H.
Elective		(Literature, Philosophy, Art, or Religion 51 or 52...	3	N	95	Introduction to the Field of Social Work.....	3
N	93	Medicine and Surgery (con't. through summer)..	3				
			6				3

THIRD YEAR

<i>First Semester</i>			S.H.	<i>Second Semester</i>			S.H.
N	120	Pediatric Nursing.....		N	130	Obstetric Nursing.....	
or				or			
N	130	Obstetric Nursing.....		N	120	Pediatric Nursing.....	6
or				or			
N	140	Medical & Surgical Nursing including O.R. & Diet Therapy.....	6	N	140	Medical & Surgical Nursing including O.R. & Diet Therapy.....	
Soc. N151	Family Relationships.....			Psyeh 116	Psychology of Adjustment.		
or				or			
Psych 116	Psychology of Adjustment.	3		Soc. N151	Family Relationships.....	3	
		<hr/>	9			<hr/>	9

SUMMER SESSION

N 140	Medical & Surgical Nursing including O.R. & Diet Therapy.....		S.H.
or			
N 120	Pediatric Nursing.....		
or			
N 130	Obstetric Nursing.....	6	
		<hr/>	6

FOURTH YEAR

<i>First Semester</i>			S.H.	<i>Second Semester</i>			S.H.
N	160	Social Foundations of Nur- sing Education.....	3	N	180	Aspects of Public Health Nursing.....	6
or		Religion (above 100 level).. Elective (above 100 level).. 3		N	190	Advanced Medical & Sur- gical Nursing with Semi- nar on Nursing Problems.	3
N	170	Psychiatric Nursing.....	6	or			
or				N	170	Psychiatric Nursing.....	6
N	180	Aspects of Public Health Nursing.....	6	or		Religion (above 100 level)	
N	190	Advanced Medical & Sur- gical Nursing with Semi- nar on Nursing Problems..	3	N	160	Elective (above 100 level). Social Foundations of Nur- sing Education.....	3
		<hr/>	9 or 12			<hr/>	9 or 12

SUMMER SESSION

ADVANCED PRACTICE IN NURSING

Description of Courses—Degree Program

UNDERGRADUATE COLLEGES

EDUCATION

88. EDUCATIONAL PSYCHOLOGY: LEARNING AND MEASUREMENT.—This course and Education 118 constitute a general introduction to the field of Educational Psychology. This course deals with (1) the psychology of learning, including: the nature of the learning process; general principles or laws of learning; the course of learning and forgetting; factors influencing efficiency in learning and retention; and the transfer of training; and (2) measurement, including: the basic concepts in the measurement of intelligence; standardized achievement tests; the extent and significance of individual differences in ability and performance.

Opportunity will be afforded for examination and study of a variety of tests of intelligence and achievement. *Either semester.* 3 s.h. (E)

ASSOCIATE PROFESSORS EASLEY AND RUDISILL;
ASSISTANT PROFESSOR GEHMAN

118. EDUCATIONAL PSYCHOLOGY: PSYCHOLOGICAL DEVELOPMENT.—This course traces the psychological development of the individual from infancy to maturity. The principal topics considered are: the interdependence of hereditary and environmental factors in development, the nature of the development process, the establishment of the early basic patterns of behavior, changes and conditions producing these changes throughout childhood and adolescence to maturity, and the origin and treatment of minor behavior disorders. Not open to students who have had Psychology 121 or 126. Prerequisite: three semester hours in psychology or educational psychology. *Either semester.* 3 s.h. (E)

ASSOCIATE PROFESSOR EASLEY;
ASSISTANT PROFESSOR GEHMAN

ENGLISH

L. ENGLISH FUNDAMENTALS.—All freshmen whose scores on the placement tests indicate that they are not ready for English 1 must take this course. Students who fail in English L must repeat the course. Students who have earned credit in English L must also take English 1 and 2. 3 s.h. (w)

ASSISTANT PROFESSOR JORDAN AND MR. GRAVES

1-2. ENGLISH COMPOSITION.—All freshmen are required to take course 1 and course 2.

Students who fail in English 1 or 2 must repeat the course in the following semester. Students in courses 1 and 2 who fail to make an average of "C" or better are strongly advised to earn credit for an additional course in English composition. 6 s.h. (E & w)

PROFESSORS BEVINGTON AND WARD; ASSOCIATE PROFESSORS BOWMAN, FISHER, PATTON, SMITH, SPENCER, AND WHITE; ASSISTANT PROFESSORS BEVINGTON, BUDD, JORDAN, AND POTEAT; DRs. BOWERS, ANDERSON, HENINGER, BROOKS, FRASER, KOTTLER, LANE, MAJOR, REICHARD, SMITH, AND WICKES; MISS LIBBY; MESSRS. BOATWRIGHT, BORNHAUSER, GRAVES, HARGREAVES, McDONALD, MORRIS, REEVES AND VAN FOSSEN.

33. WRITING LABORATORY.—A non-credit course in elementary composition may be required of students who evidence deficiencies in composition as reported by members of the faculty. Students may enter or leave this course at any time, at the instructor's discretion.

ASSOCIATE PROFESSOR HARWELL AND ASSISTANT JORDAN

ENGLISH AND AMERICAN LITERATURE AND LANGUAGE

55, 56. REPRESENTATIVE WRITERS.—The following works are studied in the first semester: Chaucer's Prologue to *The Canterbury Tales* and at least two tales, Shakespeare's *1 Henry IV*, *King Lear*, and one other play, the English Bible (selections), Milton's *Paradise Lost* (selections) and some of the shorter poems; in the second semester: Pope's poems (selections), Fielding's *Joseph Andrews* or *Tom Jones*, selections from Keats's or Wordsworth's poems, selections from Browning's or Arnold's poems, Thackeray's *Vanity Fair* or Hardy's *The Mayor of Casterbridge*, selections from Yeats's poems, two plays by Shaw or a twentieth-century British or American novel. 6 s.h. (E & w)

PROFESSORS BEVINGTON, BLACKBURN, BOYCE, IRVING, SANDERS, AND TURNER;
ASSOCIATE PROFESSORS BOWMAN, MITCHELL, AND PATTON; ASSISTANT
PROFESSORS BEVINGTON AND POTEAT; DRs. BOWERS, FRASER,
KOTTLER, LANE, REICHARD, SMITH AND WICKES

HISTORY

1, 2. HISTORICAL BACKGROUND OF THE WORLD TODAY.—This course is an introduction to the study of modern history with special reference to the

issues in the modern world. Topics selected for emphasis are: the contest between liberty and authority in the modern state; changing economic organization and theory—capitalism and the challenges to it; the problems of peace and war among the states; the changing faith men live and die by. Beginning about 1500 with the rise of the European dynastic states, the story is pursued in the first semester to approximately 1871, and in the second through the two great world wars. The central theme in both semesters is the expansion of the influence of Western Europe throughout the world, with some attention to the rise of the United States as a world power. 6 s.h. (w & e)

Sophomores and juniors are not admitted to this course.

ASSOCIATE PROFESSORS FERGUSON, PARKER, AND ROPP;
ASSISTANT PROFESSOR COLTON; DRs. HOLLYDAY,
TISCHENDORF AND YOUNG

51, 52. HISTORICAL BACKGROUND OF THE WORLD TODAY.—An introductory course for sophomores, juniors, and seniors dealing with the topics indicated in the description of course 1-2. 6 s.h. (w & e)

PROFESSOR CURTIS; ASSISTANT PROFESSORS ACOMB AND
COLTON; DRs. TISCHENDORF AND YOUNG

PHILOSOPHY

49. ETHICS.—An introductory consideration of basic ethical concepts and principles as developed in European and American thought and culture. 3 s.h. (e & w)

PROFESSORS BAYLIS AND NEGLEY; ASSISTANT PROFESSORS BUCK AND WELSH

POLITICAL SCIENCE

11-12. THE AMERICAN SYSTEM OF GOVERNMENT.—An introductory study of the principles and operation of the American government in the light of the present world position of the United States. (Only open to Freshmen.) 6 s.h. (e & w)

ASSISTANT PROFESSOR HALL

[Students completing 11 in the spring semester should take course 62.]

AMERICAN GOVERNMENT AND POLITICS

61-62. AMERICAN AND COMPARATIVE POLITICAL SYSTEMS.—Principles and institutions of modern government, the first semester being devoted to American government, the second to a comparative study of governments in the United States and outside. 6 s.h. (e & w)

ASSOCIATE PROFESSOR SIMPSON; ASSISTANT PROFESSORS
CHEEK, HALL, HANSON AND LEACH

REQUIRED PHYSICAL EDUCATION

Two semester hours to be completed in two semesters are included in the 127 hours required for graduation.

At the beginning of the freshman year, after a series of tests have been given, individual conferences are held and each student is guided into the type of activity she most needs, as determined from the evaluation of the test scores and the results of the conference. This course continues for half the semester after which all freshmen take body mechanics and social recreation for the remainder of the semester.

During the second semester every student will elect two activities from those offered by the Department.

PROFESSOR JULIA R. GROUT; MESDAMES BOOKHOUT,
SMITH, AND WRAY; MISSES EDDY, HOLTON,
LEWIS, SPANGLER AND WOODYARD

PSYCHOLOGY

116. PSYCHOLOGY OF ADJUSTMENT.—The course is planned to give an adequate understanding of problems of adjustment and of mental hygiene. Lectures and discussions cover an application of the principles and findings of normal and abnormal psychology as these relate to the adjustment of the average individual

in our changing society; a survey of the principles of mental hygiene; discussions of current socio-cultural trends significant for individual adjustment. 3 s.h. (w)

ASSISTANT PROFESSOR REICHIENBERG-HACKETT

RELIGION

1. THE ENGLISH BIBLE.—A survey of the contents of the Old Testament books in the light of their origin in the history and religion of the Hebrew people. 3 s.h. (E)

PROFESSOR CRUM; ASSISTANT PROFESSOR MANSCHRECK; DRs. DANIELS AND OSBORN; MESSRS. BROWN AND LANGFORD

2. THE ENGLISH BIBLE.—A study of the personalities and literature of the New Testament against their Jewish, Hellenistic and Roman background. Although Religion 1 is not a prerequisite, it will be an aid to the student to complete 1 before taking 2. 3 s.h. (E)

PROFESSORS CRUM AND MYERS; ASSISTANT PROFESSORS MANSCHRECK AND SALES; DRs. DANIELS AND OSBORN; MR. LANGFORD

51. THE ENGLISH BIBLE.—An introductory course in the Old Testament for sophomores and juniors. (See description of Religion 1.) Students may not receive credit for both 51 and 1. 3 s.h. (E)

PROFESSOR MYERS; ASSOCIATE PROFESSOR PHILLIPS; ASSISTANT PROFESSORS BRADLEY AND MANSCHRECK; DRs. DANIELS AND OSBORN; MR. LANGFORD

52. THE ENGLISH BIBLE.—A survey course in New Testament life and literature for sophomores and juniors. (See description of Religion 2.) It will be to the advantage of the students to take Religion 1 or 51 before taking 52. Students may not receive credit for both 52 and 2. 3 s.h. (E)

PROFESSOR MYERS; ASSOCIATE PROFESSOR PHILLIPS; ASSISTANT PROFESSORS BRADLEY AND MANSCHRECK; DRs. DANIELS AND OSBORN; MR. LANGFORD

SOCIOLOGY

91-92. GENERAL SOCIOLOGY.—An introduction to the scientific study of social life; its origin, evolution and organization as illustrated in the study of a number of concrete social problems. 6 s.h. (E & W)

PROFESSOR JENSEN; ASSOCIATE PROFESSOR SCHETTLER; ASSISTANT PROFESSORS ROY AND WHITRIDGE; MESSRS HOWELL, McNURLEN, AND TUMBLIN

Sociology N151. FAMILY RELATIONS.—This course has two objectives. First, it seeks to familiarize students with those basic facts and problems in family life of which an understanding is essential to successful professional work by nurses. Second, the course seeks to provide students with such information and insights as may aid them in making successful adjustments in their own courtship and marriage. Either semester. 3 s.h.

ASSOCIATE PROFESSOR SCHETTLER

ZOOLOGY

1. ANIMAL BIOLOGY.—The principles of biology as applied to animals. 4 s.h. (W & E)

ASSOCIATE PROFESSORS HUNTER AND ROBERTS AND STAFF

2. GENERAL ZOOLOGY.—A brief survey of the animal kingdom. Prerequisite: Zoology 1. 4 s.h. (W & E)

PROFESSOR BOOKHOUT AND ASSOCIATE PROFESSOR HUNTER AND STAFF

SCHOOL OF NURSING

BIOLOGICAL AND PHYSICAL SCIENCE

Anat. 51. ANATOMY.—The student gains an understanding and appreciation of body structure and its relation to normal functions in health and abnormal functions in disease. Audio-visual aids are used extensively and in conjunction with laboratory work the anatomical structures are demonstrated on dissected human specimens. 3 s.h.

PROFESSOR MARKEE AND STAFF

Physio. 51. HUMAN PHYSIOLOGY.—A study of the normal functions of the human body with references to their applications in health and disease. 3 s.h.

PROFESSOR F. G. HALL AND STAFF

CHEMISTRY

Chem. 50. CHEMISTRY.—A course in the fundamentals of general inorganic chemistry with particular emphasis on the needs of the student nurse. A brief introduction to organic chemistry. 3 s.h.

ASSOCIATE PROFESSOR TAYLOR

Chem. 51. PHYSIOLOGICAL CHEMISTRY.—This course is designed to aid the student in understanding the chemical mechanism of the human body both in health and in disease. The student also acquires knowledge concerning the chemical basis of diagnosis and therapy. 3 s.h.

ASSOCIATE PROFESSOR TAYLOR

Micro. 4. MICROBIOLOGY.—From the learning experiences included in this course the student is enabled to understand and appreciate her role in the prevention of microbial disease. 3 s.h.

ASSOCIATE PROFESSOR WILLETT

NURSING AND ALLIED ARTS

N2. INTRODUCTION TO NURSING.—A survey of nursing history, with emphasis on contemporary concepts and movements in nursing.

ASSISTANT PROFESSOR MOSES

160N. SOCIAL FOUNDATION OF NURSING EDUCATION.—A survey of major historical, philosophical, and sociological factors which have affected development in Nursing and Nursing Education. The purpose of the course is to give the student a better understanding of the place of nursing in present day society and the responsibilities of the individual nurse toward that society. 3 s.h.

PROFESSOR JACOBANSKY

N1. ORIENTATION TO THE HEALTH FIELD.—An introduction to basic health needs of the community and the agencies and programs designed to meet them. 2 s.h.

ASSISTANT PROFESSOR BROCKER

Nutr. 53. NORMAL NUTRITION AND DIETETICS.—This course considers the nutritive requirements for individuals in different stages of development, and in different occupations. The methods of supplying foods conforming to the individual nutritional needs are given for varying income levels. Actual foods are compared according to their contribution of specific nutrients, and in relation to their place in the daily diet. 3 s.h.

MRS. SHELTON

N91-92. FUNDAMENTALS OF NURSING.—A study of the fundamentals of nursing care as it pertains to individuals and families. The nurse's role in prevention and detection of illness, and treatment and rehabilitation is emphasized. Lectures, discussion, correlated practice. 12 s.h.

ASSOCIATE PROFESSOR INGLES, MRS. STICHT; MISSES COVINGTON, CAMPBELL, MCKELVEY, McDUGAL, JACKSON, BATES

N93. MEDICINE AND SURGERY.—A study of common medical and surgical conditions with emphasis on etiology, pathology, treatment and related nursing care. 3 s.h.

PROFESSOR STEAD AND STAFF;
PROFESSOR HART AND STAFF

N91-92-93. Includes 4-20 hours per week of correlated clinical experience.

N95. INTRODUCTION TO THE FIELD OF SOCIAL WORK.—An orientation to social work services and how they may be used to meet patients' needs in illness and in rehabilitation. 3 s.h.

ASSISTANT PROFESSOR WIEN

N120. PEDIATRIC NURSING.—This course is designed to help the student understand children, their response to illness, and the therapy involved in their care, so that she can assume her role in child health promotion in the hospital, the home, and the community. A developmental approach is used throughout the course with emphasis on the child as a member of the family. The acute communicable diseases of childhood are included.

MISSES FORGIONE, KOESY, PARKER;
PROFESSOR HARRIS AND STAFF

N130. OBSTETRIC NURSING.—Considers normal and abnormal phases of the reproductive cycle basic to nursing care of the mother and newborn child including the premature infant. The effect of reproduction upon individual and family; community aspects and opportunities for teaching in maternal health promotion. 6 s.h.
MISSSES ARNETT, MITCHAM, HARBISON; PROFESSOR CARTER AND STAFF

N140. MEDICAL AND SURGICAL NURSING.—A study of nursing care of selected patients; discussion of the principles of surgical aseptic technic basic to nursing practice in the Operating Room; and practice in nutrition in disease. Conferences, discussions, field trips, field experience. 6 s.h.

ASSOCIATE PROFESSOR INGLES, MISSSES MILLER, WILKINSON, FAUVER, EVANS

N170. PSYCHIATRIC NURSING.—Discussion of the principles of psychiatric nursing and the functions and responsibilities of the nurse in the total care of the psychiatric patient with emphasis on mental hygiene and care and rehabilitation of the mentally ill. 6 s.h.

ASSISTANT PROFESSOR SPRING; MRS. BULLOCK
PROFESSOR BUSSE AND STAFF

N180. PUBLIC HEALTH NURSING.—Study of the basic principles of public health nursing concurrent with planned experiences in the community designed to develop skills in family health guidance and work with community resources. 6 s.h.

ASSISTANT PROFESSOR BROCKER, MRS. KAMIN

N190. ADVANCED NURSING.—Students selected and study areas of special interest to them. The leadership of the professional nurse and the function of the nurse in disaster situations are explored. Conferences, group discussions, ward rounds, laboratory and clinical experiences. 3 s.h.

ASSOCIATE PROFESSOR INGLES, MRS. MCCASKILL,
MISSSES WILSON, DAVENPORT

N120, 130, 140, 170, 180, 190.—Includes 20-40 hours a week of correlated clinical experience.

Master of Science in Nursing



It is anticipated that the degree Master of Science in Nursing with specialization in Medical-Surgical Nursing will be offered in 1957-1958.

The program for advanced study and research in nursing aims at the preparation of the graduate student for advanced level positions in nursing. Clinical experiences which will increase the student's understanding of comprehensive nursing care will be provided in the area of specialization.

The program of study shall include a minimum of 30 semester hours of work to be planned as follows:

Medical-Surgical Nursing.....	12 s.h.
Electives from the Behavioral Sciences.....	12 s.h.
Research thesis.....	6 s.h.

A minimum of one calendar year will be required for completion of this program.

Additional information may be obtained from:

Admissions Office
School of Nursing
Duke University
Durham, North Carolina

THE SCHOOL OF FORESTRY

Fall Semester begins September 19, 1957

Spring Semester begins January 30, 1958

Forestry in Duke University



General Statement

Forestry in Duke University began early in 1931, when, through placing the Duke Forest under intensive management for forestry purposes, a substantial beginning was made in laying the foundation for educational work and research in forestry.

An academic-forestry curriculum, designed for students intent upon pursuing the study of forestry, particularly as a profession after graduation, was organized in Trinity College of Duke University in 1932 (see *Announcement on Undergraduate Instruction in Duke University*). This course of study provides only for instruction in fundamental and auxiliary subjects basic to a proper understanding of the highly specialized work in technical forestry. Duke University offers no professional degree in technical forestry available to undergraduates.

Training in technical forestry leading to the professional degrees, Master of Forestry and Doctor of Forestry, is offered in the School of Forestry, and is open to graduates of recognized scientific schools or colleges, universities, and professional schools of forestry and to other men who meet the entrance requirements of the school.

Duke University is also prepared to offer, through the Graduate School of Arts and Sciences, graduate work in the more scientific aspects of forestry leading to the Master of Arts and Doctor of Philosophy degrees. This work is available to graduates of schools of forestry of recognized standing, and to college or university graduates holding the Bachelor's degree with their major work in appropriate scientific subjects. Students who have had no previous training in forestry, but who are contemplating work toward either the Master of Forestry or Doctor of Forestry degree should include in their undergraduate preparation at least two full years in botany, including general morphology or anatomy, the taxonomy, physiology, and ecology of plants; at least one course in zoology or general biology; courses in chemistry, physics, geology, economics, mathematics; and at least two years of French or German.

Several staff members of the Southeastern Forest Experiment Station are engaged in cooperative research projects in the Duke Forest.

Specialists from this station and other prominent members of the U. S. Forest Service and representatives of forest and wood-using industries give occasional scheduled lectures at the School.

Educational Facilities

A description of the facilities of the School of Forestry and of the Duke Forest is given in the *Bulletin of the School of Forestry*.

Fellowships, Scholarships, and Graduate Assistantships in Forestry



A NUMBER of fellowships, scholarships, and research assistantships are available to men who offer promise of becoming leaders in the forestry profession. These will be awarded for high character and marked scholastic ability as judged by education, experience, and personal references. For more detailed information see the *Bulletin of the School of Forestry*.

Tuition, Fees and Expenses



THE following table shows the general fees and charges collected from all students. All fees for each semester are due and payable, unless otherwise specified, at the time of registration at the beginning of that semester, and no student is admitted to classes until arrangements have been made with the Treasurer of the University for the settlement of fees.

General Fees

Tuition, per semester.....	\$325.00
General Fee, per semester.....	60.00

Forestry students may obtain admission to all regularly scheduled University athletic contests held on the University grounds during the entire academic year by payment of the athletic fee of \$10.00 per year plus any Federal taxes that may be imposed. This fee is payable in the fall semester.

TRANSCRIPTS: A student desiring to transfer from Duke University to another institution is entitled to one transcript of his record. A charge of one dollar is made for each additional copy.

PAYMENTS TO FELLOWS AND SCHOLARS: Payments by the University of stipends to fellows, research assistants, and scholars are made in eight monthly installments, beginning October 20. Fellows and scholars are required to pay the regular tuition fee and such additional fees as are ordinarily required of graduate students.

Rooms for men are provided in the Men's Graduate Center. Food service is available. For more complete information see the *Bulletin of the School of Forestry*.

Requirements for Admission to the School of Forestry



THE admission requirements of the School of Forestry for work toward the Master of Forestry degree presuppose that an applicant is either:

1. A graduate of a scientific school, college, or university of high standing, but without professional training in forestry, or
2. A graduate of a professional school of forestry, or
3. A student who has successfully completed the pre-forestry curriculum of one of the institutions cooperating with the School of Forestry.

Each applicant must present a certified transcript of his academic record showing the courses he has taken, the number of credit hours he has earned and the grades received. The total number of quality points* must be at least two and one half times the total credit hours to meet the minimum scholastic standards required for admission to the School. An applicant also must have satisfactorily completed undergraduate work in minimum amount, as follows:

One year of biology, including at least one semester of botany, or one year of botany.

One year each of English composition and of chemistry.

One course each in physics and in the principles of economics.

Mathematics, through college algebra and trigonometry.

It is urged that an applicant without professional training in forestry present additional credits in the above subjects and in one or more of the following subjects: soils, geology, mineralogy, petrology, climatology, surveying, languages (particularly German and French), sociology, political science, philosophy, psychology, and zoology.

An applicant who is a graduate of a professional school of forestry will present a certified transcript of scholastic record showing the

* Grades for each hour of college credit and also for credit earned in the School of Forestry are valued in quality points as follows: "A," 4 points; "B," 3 points; "C," 2 points; "D," 1 point; and "F," no points.

award of a degree. Before registering for the first semester of residence, such applicants will be required to select the branch or branches of forestry in which they wish to concentrate the major part of their work and to prepare their proposed programs in conference with the appropriate faculty adviser. Ordinarily graduates of a fully accredited school of forestry should be able to meet all requirements for the Master of Forestry degree in one full school year of resident study; others will require a longer period of residence.

Students must make application for admission in advance of the opening of the school year. Those students entering without acceptable courses in plane surveying, forest-tree identification, forest surveying, and forest mensuration must take the work in these subjects in the Summer Session, and are required to submit their applications prior to May 1. Students entering with advanced standing in all four courses should make application before September 1. Application blanks will be sent upon request made to the Dean of the School of Forestry.

Cooperative Plan of Study with Selected Colleges and Universities



AWARE of the far reaching values to be derived from training in the liberal arts and sciences, the Duke School of Forestry, since its inception, has had the cooperation of Trinity College, the men's undergraduate college of arts and sciences of Duke University, in preparing students for professional careers in forestry. Under the plan a student devotes his first three years to a coordinated and carefully integrated program of study in the basic arts and sciences in Trinity College. The summer between his junior and senior year and the two following school years are spent in the School of Forestry. Upon the successful completion of this five-year course of study, a student has earned the Bachelor of Science degree from Trinity College and the professional Master of Forestry degree from the Duke School of Forestry.

Based upon the experience and success of this cooperative program with Trinity College, the School of Forestry in 1952 initiated similar programs of collaboration with a selected group of colleges and universities located throughout the United States. These programs offer students the numerous advantages of a broad background in liberal arts and sciences as preparation for later professional training. A student intent upon following such a course of study should make appli-

cation to one of the colleges listed below. Admission requirements and other information pertinent to matriculation may be obtained from each of these institutions. Not later than the end of the first semester of the third year in the college or university of his choice, the student must make formal application for admission to the Duke School of Forestry. To qualify for admission under these programs, a student must have followed a planned course of study arranged in consultation with his advisor, must have the official recommendation of his college, and must meet the minimum requirements for admission to the Duke School of Forestry.

A list of cooperating schools is given in the *Bulletin of the School of Forestry*.

Requirements for the Degree of Master of Forestry



THE requirements for the degree of Master of Forestry (M.F.) are governed by the extent of the student's previous professional training. Normally, students who have been awarded the degree of Bachelor of Science in Forestry, or equivalent, at an accredited school of forestry, may complete the requirements for the M. F. degree in one academic year. Students who have had no prior professional training in forestry are required to complete one summer session and two academic years of resident study. Work of equivalent grade done in residence at other institutions may, with the approval of the Faculty, be accepted as credit toward the degree, but a minimum of one year of residence at Duke University is required.

To qualify for the M.F. degree each student must have obtained at least two and one-half quality points per semester hour of credit under the quality-point system.

The submission of a thesis for the M.F. degree is optional. In lieu of a thesis, and with the approval of the student's faculty adviser, an acceptable report on a special study will be required, credit for which will not exceed three semester hours. Those students who elect to submit a thesis will be required to file three copies of the thesis, type-written and bound in accordance with regulations set forth by the Faculty, in the Office of the Dean of the School of Forestry on or before May 15.

No student may take less than fourteen nor more than eighteen semester hours of credit without special permission of the Faculty.

SUMMER SESSION

	S.H.
Plane Surveying (C.E. S110).....	4
Forest-Tree Identification (F. S149).....	1
Forest Surveying and Aerial Photo Interpretation (F. S150).....	4
Forest Mensuration (F. S151).....	4

FIRST YEAR

First Semester

S.H.

Harvesting and Processing Forest Products (F. 211).....	3
Properties of Wood (F. 259).....	3
Forest Soils (F. 261).....	3
Economics of Forestry (F. 277).....	3
Electives	3

Second Semester

S.H.

Harvesting and Processing Forest Products Field Trip (F. 212).....	1
Forest Pathology (F. 224).....	3
Sampling Methods (F. 251).....	3
Dendrology (F. 253).....	3
Silvics (F. 264).....	3
Electives	2

SECOND YEAR

Two curricula in forestry are available after the common minimum requirements of the first year have been met. One is the SILVICULTURE-MANAGEMENT combination; the other is in FOREST PRODUCTS. The election of curriculum to be followed is made prior to the autumn semester of the second year. The required work in each curriculum is as follows:

SILVICULTURE-MANAGEMENT CURRICULUM

First Semester

Second Semester

	S.H.		S.H.
Forest Entomology (F. 231).....	3	Soils and Silviculture Spring	
Silviculture (F. 265).....	3	Trip (F. 266).....	1
Applied Silviculture (F. 267).....	1	Forest Protection (F. 274).....	2
Economic Analysis in Forest		Advanced Forest Management (F. 342)	2
Management (F. 279).....	3	Thesis research or electives.....	10
Forest Management (F. 281).....	3		
Thesis research or electives.....	2		

FOREST PRODUCTS CURRICULUM

First Semester

Second Semester

	S.H.		S.H.
Seasoning and Preservation (F. 213).....	3	Forest Products Entomology (F. 232).....	3
Silviculture (F. 265).....	3	Wood Anatomy (F. 260).....	3
Forest Management (F. 281).....	3	Industrial Engineering (Eng. 158).....	3
Advanced Forest Utilization (F. 311).....	3	Thesis research or electives.....	6
Thesis research or electives.....	3		

The submission of a thesis for the M.F. degree is optional. In lieu of a thesis, and with the approval of a student's faculty adviser, an acceptable report on a special study will be required, credit for which will not exceed three semester hours.

Each candidate who writes a thesis will be required to file in the office of the Dean of the School of Forestry on or before May 15 three copies of the thesis, typewritten and bound in accordance with regulations set forth by the Faculty. The thesis shall be based upon an original study made in the field, laboratory, or library.

Work of equivalent grade done in residence at other institutions may, with the approval of the Faculty, be accepted as credit toward the M.F. degree. A minimum of one year's residence is required at Duke University. Students who have had satisfactory undergraduate training in forestry may, with the approval of the Faculty, elect to devote the major portion of their time to research under the supervision of one or more members of the Faculty and prepare a more comprehensive thesis than is required of students entering the School without previous work in forestry. Students in the School of Forestry may take in allied departments of the University as electives certain courses approved by the Faculty.

Requirements for the Degree of Doctor of Forestry



THE degree Doctor of Forestry (D.F.) is a professional and research degree conferred on those students who have satisfactorily completed specified requirements of advanced study and research. Although course work is a necessary part of a student's program, the mere accumulation of course credits will not be sufficient for the attainment of this degree. The granting of the D.F. degree is based primarily upon the student's thorough knowledge of a specialized field of study and upon the production of an acceptable dissertation embodying the results of original research. The general requirements, which are presented in the following paragraphs, ordinarily will be rigidly adhered to, although deviations in exceptional cases may be made with the approval of the Faculty of the School of Forestry.

The D.F. degree is offered with majors (also minors) in the following branches of forestry: forest economics, forest entomology, forest management, forest mensuration, forest pathology, forest soils, forest-tree physiology, forest utilization, silvics, silviculture, and wood and forest products technology.

Prospective students should correspond with the Dean of the School of Forestry on all matters pertaining to admission to the School.

ENTRANCE REQUIREMENTS: A prospective student must have received the degree of Master of Forestry, or its equivalent, from a school of forestry of recognized standing. His scholastic average for his undergraduate work must be at least $2\frac{1}{2}$ quality points, and that of his graduate studies three quality points per hour of credit.

An applicant must file a formal application for admission together with transcripts of his undergraduate and graduate academic records. In his application he should clearly state the branch of forestry in which he desires to concentrate, and if possible, the specific research.

The Committee on Admissions of the School of Forestry, together with the prospective student's major adviser, will determine if the qualifications of the applicant meet entrance requirements.

RESIDENCE REQUIREMENTS: The period of resident study beyond the M.F. degree or its equivalent is two years. Course work of equal grade taken at another college or university may, with Faculty approval, be accepted in partial fulfillment of the residence re-

quirement, but the last year of residence must be at Duke University. With the approval of the Faculty, one year of resident credit may be granted for work taken in the regular terms of the Summer Session of Duke University. Graduate work of a fragmentary nature taken over a period of several years will not meet the residence requirement.

PROGRAM OF STUDY: A committee consisting of five members of the Faculty will be appointed by the Dean to supervise the work of each student. This committee shall consist of a major adviser, a minor adviser and three other Faculty members. The major adviser will serve as Committee Chairman.

If the student's previous training is inadequate, he will be required to remedy such deficiencies as may be directed by his committee. The student, in consultation with his advisers, will prepare a program of study and research. The proposed program will be presented to the committee for consideration and acceptance, and then submitted to the Faculty of the School of Forestry for final approval. The minor requirement may be fulfilled by advanced course work or course work and research. Requirements for the minor will be established by the Faculty member in charge of the field. The minor may be taken in the School of Forestry, or in a related department, school, or college in the University.

A grade point average of at least three quality points per credit hour is required of all work toward the doctorate.

FOREIGN LANGUAGES: A reading knowledge of two foreign languages is required. One of these shall be either French or German; the other will be selected by the committee with the view toward determining the student's needs. The foreign language examinations will be conducted by the appropriate language departments or, for certain languages, by a qualified member of the Faculty of Duke University.

COMPREHENSIVE EXAMINATION: At least six months before the student expects to receive the D.F. degree, and after he has completed the foreign language requirement and most of his formal course work, he will be required to take a comprehensive preliminary examination. The examination will be written in subjects specified, and may be followed by an oral examination given by the committee. The decision as to whether the examination has been passed or failed is the responsibility of the committee.

Should the student fail the comprehensive examination he may apply for a second examination to be taken not earlier than six months after the first. Failure in the second examination renders the student ineligible to continue work for the D.F. degree at Duke University.

Upon satisfactory completion of the preliminary examination the student shall be considered a candidate for the D.F. degree.

DISSERTATION: In addition to obtaining adequate training in the field of his specialty, the student must demonstrate his ability to plan and conduct sound, original research. Evidence of this accomplishment must be presented in the form of an acceptable dissertation embodying the results of original work, which is a definite contribution to knowledge.

The subject of the dissertation must receive the approval of the Faculty, and the title filed with the Dean of the School of Forestry on or before October 15 of the academic year in which the candidate desires to take his final examination.

Four typewritten copies of the dissertation in approved form, must be deposited with the Dean of the School of Forestry on or before April 15 of the academic year in which the student expects to obtain the D.F. degree. The original and first carbon copy will be deposited in the University Library, the major adviser will receive one copy, and the fourth copy will be returned to the student.

The dissertation must be published either in its original form or in a modified form approved by the major adviser. In its published form the title page should include this statement: "A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Forestry in the School of Forestry of Duke University." In some instances an abstract, published in a recognized journal, will be considered as meeting the publication requirement.

The candidate must deposit a fee of \$50.00 with the Treasurer of the University on or before May 1 of the year the degree is to be conferred. If the dissertation is published in acceptable form within three years from the time the degree is granted, the deposit will be returned to the student upon receipt of 10 reprinted copies of the publication.

FINAL EXAMINATION: The final examination will be in defense of the candidate's dissertation and on related subject matter. It will be oral and will be conducted by the supervisory committee. At least six months must elapse between the dates of the preliminary and the final examinations.

Forestry in the Graduate School



MAJOR and minor work is offered in the scientific aspects of forestry leading to the A.M. and Ph.D. degrees, which are administered by the Graduate School of Arts and Sciences. Work for these degrees may be pursued only in forest-tree physiology, wood anatomy and properties, forest pathology, silvics, forest soils, forest mensuration, forest entomology, and forest economics. Students who have had specialized training in botany or soil science and in allied basic subjects, such as physics, chemistry, geology, and zoology, may pursue graduate study and research only in the specialized fields for which their previous work has qualified them. Students who do not have previous training in forestry will be required to complete a minimum of thirty semester hours of approved work in forestry as a preliminary requirement to advanced study for the A.M. and Ph.D. degrees. Holders of these degrees will not be regarded as professionally trained foresters.

Applicants for admission to the Graduate School must ordinarily have made, in their undergraduate work, not less than a "B" average and must not have concentrated excessively in one field of study to the detriment of a rounded program. They should have met substantially the requirements for the A.B. or B.S. degree at Duke University.

In addition to fulfilling the usual requirements for admission, the applicant must satisfy the Director of Graduate Studies in Forestry as to his liberal arts training, as well as to his preliminary training in the field of forestry.

For detailed information concerning admission to the Graduate School, and for regulations governing candidacy for the A.M. and Ph.D. degrees, language requirements, residence requirements, and other regulations concerning these degrees, the student should consult the *Bulletin* of the Graduate School of Arts and Sciences.

Courses and Subjects of Instruction



With the exception of the Summer Session courses, odd-numbered courses are usually offered in the autumn semester, and even-numbered courses are offered in the spring semester.

SCHOOL OF FORESTRY COURSES

IN THE SUMMER SESSION

C.E. S110. PLANE SURVEYING.—A special section of C.E. 61 intended for students in forestry and others of advanced standing. *Four weeks, eight hours a day, beginning June 12, 1957. 4 s.h. (w)* MR. ARGES

S149. FOREST-TREE IDENTIFICATION.—Field studies leading to the identification of trees and principal shrubs indigenous to the Piedmont and coastal plain forests of the Southeastern United States. *One week, eight hours a day, beginning July 10, 1957. 1 s.h. (w)* MR. HARRAR

S150. FOREST SURVEYING AND AERIAL PHOTO INTERPRETATION.—Application of plane surveying to forest problems; practice in making boundary, topographic and cover type surveys; details of land ownership and transfer, title search, and deed descriptions. The last two weeks will be spent in the study of the principles of aerial photogrammetry and photo interpretation, and may be taken separately for 2 hours of credit. Prerequisites: Civil Engineering S110, Forestry S149, or equivalents. *Four weeks, eight hours a day, beginning July 17, 1957. 4 s.h. (w)* MR. CHAIKEN

S151. FOREST MENSURATION.—Field studies in methods of measuring content and growth of trees and forest stands; practice in timber estimating, log scaling, use of mensurational instruments, and collection of basic data. *Four weeks, eight hours a day, beginning August 14, 1957. 4 s.h. (w)* MR. SCHUMACHER

S230. INSECT ENEMIES AND DISEASES OF SOUTHERN FORESTS.—Identification and control of injurious forest insects and diseases occurring in the South. Time to be arranged. Minimum enrollment 10. 1 s.h. or may be taken without credit. MESSRS. ANDERSON AND JOHNSON

FOR SENIORS AND GRADUATES

211-212. HARVESTING AND PROCESSING FOREST PRODUCTS AND FIELD TRIP.—Methods of harvesting and processing forest products with emphasis on methods and costs in managed North American forests. A two-week field trip (F. 212), during which typical forest harvesting operations and processing plants are studied, is required of students taking Forestry 211. The field trip (F. 212) may be taken by other students having had work equivalent to Forestry 211. F. 211—3 s.h.; F. 212—1 s.h. (w) MR. WACKERMAN

213. SEASONING AND PRESERVATION OF WOOD.—Principles of seasoning lumber and other forest products by air drying and kiln drying, types of kilns and their operation; principles, methods, and materials used in treating wood to increase its durability. 3 s.h. (w) MR. WACKERMAN

214. MARKETING FOREST PRODUCTS.—Methods of selling and distributing timber, lumber, and other forest products in domestic and foreign trade; transportation methods; promotional activities of trade associations; competition between producing regions for markets and problems arising from the development of wood substitutes. Prerequisites: Forestry 211-212 or equivalent. 3 s.h. (w) MR. WACKERMAN

216. LUMBER MANUFACTURING.—Methods of processing logs for sawn products with emphasis on the principles involved in obtaining maximum volume and quality yield for large and small mills and concentration yards; trends in production and consumption of lumber by regions and the development of new lumber products. 3 s.h. (w) Mr. WACKERMAN

224. FOREST PATHOLOGY.—Infectious and non-infectious diseases of forest trees, and related deterioration of forest products. Field and laboratory study of symptoms, etiology, and control. Prerequisites: Botany 1 and 2, or equivalent. 3 s.h. (w) Mr. JOHNSON

231. FOREST ENTOMOLOGY.—Principles of protecting forests from insect attack; character of insect damage to forest trees and their products; identification and biology of important species; survey methods and control. 3 s.h. (w) Mr. ANDERSON

232. FOREST-PRODUCTS ENTOMOLOGY.—Recognition of insect damage to wood products; etiology, biology and control of important species. 3 s.h. (w) Mr. ANDERSON

236. FOREST-GAME MANAGEMENT.—Principles of management for the sustained production of desirable game and fur animals on forest lands; characteristics and biology of important species. 3 s.h. (w) Mr. ANDERSON

237. FOREST-RANGE MANAGEMENT.—Principles of management of livestock grazing on forest ranges on the basis of sustained multiple use. 3 s.h. (w) Mr. ANDERSON

251. SAMPLING METHODS IN FORESTRY.—Statistical background for solution of sampling problems with special reference to sample inventory of a forest property. Offered both semesters. Prerequisite: Forestry S151. 3 s.h. (w) Mr. SCHUMACHER

252. FOREST MENSURATION.—Empirical equations and curve fitting appropriate for construction of timber yield tables, tree volume and taper tables; significance tests and graphical solution of equations. Assignments require operation of calculating machines. Prerequisite: Forestry 251. 3 s.h. (w) Mr. SCHUMACHER

253. DENDROLOGY.—Nomenclature, classification, and identification of woody plants with special reference to species indigenous to southeastern United States and other important forest regions of temperate North America. Laboratory and field work. Prerequisite: one year of biology. 3 s.h. (w) Mr. HARRAR

255. BONDING OF WOOD.—Preparation of veneers and lumber for bonding; types and characteristics of modern adhesives used in the manufacture of plywood and laminates; cold and hot pressing procedures; use of electronic heating; bag molding techniques; manufacture and properties of transmuted wood; inspection and testing procedures. Prerequisite: Forestry 259 and 260 or equivalent. 3 s.h. (w) Mr. HARRAR

257. DESIGN OF FORESTRY EXPERIMENTS AND ANALYSIS OF DATA.—Role of experimental design in field and laboratory, and statistical analysis of data as aspects of scientific methods in forestry research. 5 s.h. (w) Mr. SCHUMACHER

259. PROPERTIES OF WOOD.—The chemical nature of wood substance and its industrial chemical derivatives. Wood-moisture relationships; pertinent non-mechanical physical properties; mechanical properties and factors affecting the strength of wood; standard timber testing procedures. Uses of woods as determined by their properties. Prerequisites: one year of college chemistry; one course in college physics. 3 s.h. (w) Mr. HARRAR

260. WOOD ANATOMY.—Study of the physical features and the gross and minute structural characteristics of wood leading to the identification of the commercial woods of the United States, and the important tropical woods used in American wood-working industries. Elementary microtechnique. Prerequisite: one year of biology. 3 s.h. (w) Mr. HARRAR

261. **FOREST SOILS.**—Origin, development, and classification of soils with special emphasis on those developed in humid climates; morphological, physical, and chemical properties of soils in relation to growth of trees; effect of forests on soils. Prerequisites: Chemistry 1 and 2, and Physics 1, or equivalent; physical geology, mineralogy, petrology, and analytical chemistry are also desirable. 3 s.h. (w)

MR. RALSTON

264. **SILVICS.**—Ecological foundations of silviculture with special reference to forest site factors; influence of forests on their environment; growth and development of trees and stands; origin, development, and classification of forest communities; methods of studying forest environments. Desirable prerequisites: plant physiology, plant ecology, and Forestry 261, or equivalents. 3 s.h. (w)

MR. RALSTON

265. **THEORY AND PRACTICE OF SILVICULTURE.**—Principles governing natural regeneration and treatment of forest stands and their application; reproduction methods, intermediate cuttings, and cultural operations. Field practice includes marking for various kinds of cuttings, cultural treatments, and study of managed stands in the Duke Forest. Prerequisite: Forestry 264 or equivalent. 3 s.h. (w)

MR. KORSTIAN

266. **SOILS AND SILVICULTURE SPRING TRIP.**—Approximately one week at spring camp studying soils and silviculture in the coastal plain. Prerequisites: Forestry 261, 265 or equivalents. 1 s.h.

MR. RALSTON

267. **APPLIED SILVICULTURE.**—Application and comparison of silvicultural practices to principal commercial forest species, types and regions of temperate North America, with particular emphasis on the South. Field work will include preparation of silvicultural plans. Prerequisite: Forestry 265 or equivalent. 1 s.h. (w)

MR. KORSTIAN

268. **FOREST SEEDING AND PLANTING.**—Place of artificial regeneration in practice of forestry; reforestation surveys and plans; collection, extraction, cleaning, testing and storage of forest tree seeds; direct seeding; nursery practice; forest planting. 2 s.h. (w)

MR. KORSTIAN

274. **FOREST PROTECTION.**—Principles of forest protection; causes, character and effects of forest fires; principles of forest fire prevention, suppression and suppression; fire control costs and fire plans; protection against domestic animals, wildlife, and atmospheric agencies. 2 s.h. (w)

MR. CHAIKEN

276. **FORESTRY POLICY.**—Objective study and analysis of the development of public land and forestry policies in the United States, present policies of public and private forestry organizations, and current policy issues in the light of economic and other criteria. Prerequisites: Forestry 279, 281. 2 s.h. (w)

277. **ECONOMICS OF FORESTRY.**—Principles of economics used in the analysis of factors affecting the supply of forest products, pricing of stumpage and primary forest products, factors affecting the demand for forest products, economic characteristics and problems of the major forest products industries; analysis of such specific private forestry problems as marketing, forest ownership pattern, taxation, credit, risk, and economic fluctuations. Prerequisite: at least one course in the principles of economics. 3 s.h. (w)

279. **ECONOMIC ANALYSIS IN FOREST MANAGEMENT.**—Principles of economics of particular value in private forest management; development of specific applications for evaluating production alternatives in forestry. Prerequisite: Forestry 277 or consent of the instructor. 3 s.h. (w)

281. **FOREST MANAGEMENT.**—Principles of organizing forest properties for systematic management; use of data obtained in surveys and inventories; principles of forest regulation, including a study of normal and actual forests, rotations, cutting cycles, and methods of regulating the cut in even-aged and all-aged forests for sustained yield; introduction to the preparation of preliminary forest management plans. Prerequisites: Forestry S150, S151, or equivalents. 3 s.h. (w)

MR. CHAIKEN

211A. TO 281A. SPECIAL STUDIES IN FORESTRY.—Work on the same level as the foregoing Senior-Graduate courses to meet the needs of individual students. Credits and hours to be arranged. THE STAFF

FOR GRADUATES

301, 302. ADVANCED STUDIES IN FORESTRY.—Credits to be arranged. To meet individual needs of graduate students in the following branches of forestry:

A. SILVICS.—Prerequisites: Forestry 253, 261, and 264 or equivalents.

MR. KORSTIAN AND MR. RALSTON

B. FOREST SOILS.—Prerequisite: Forestry 261 or equivalent.

MR. RALSTON

C. SILVICULTURE.—Prerequisites: Forestry 265, 266 and 267 or equivalents.

MR. KORSTIAN

D. FOREST MANAGEMENT.—Prerequisite: Forestry 281 or equivalent.

MR. CHAIKEN

E. FOREST ECONOMICS.—Prerequisite: Forestry 277 or equivalent.

F. PROPERTIES OF WOOD.—Prerequisites: Forestry 259 and 260, or equivalents.

MR. HARRAR

G. FOREST MENSURATION.—Prerequisite: Forestry 252, or equivalent.

MR. SCHUMACHER

H. FOREST ENTOMOLOGY.—Prerequisites: Forestry 231, 232 or equivalents.

MR. ANDERSON

I. FOREST UTILIZATION.—Prerequisite: Forestry 211-212 or equivalent.

MR. WACKERMAN

J. DENDROLOGY.—Prerequisite: Forestry 253 or equivalent.

MR. HARRAR

K. FOREST TREE PHYSIOLOGY.—Prerequisites: Plant physiology, plant ecology, and silvics.

MR. KRAMER

L. FOREST PATHOLOGY.—Prerequisites: Plant physiology and Forestry 224 or equivalent.

MR. JOHNSON

311. ADVANCED FOREST UTILIZATION.—Analysis of the principles of determining the cost of and return from harvesting and manufacturing timber for various products and other uses of forests; study of factors governing the relation of tree size to net stumpage values; and the application of these principles and methods in the solution of actual case problems. Prerequisites: Forestry 211-212 or equivalent. 3 s.h. (w)

MR. WACKERMAN

320. SEMINAR IN SILVICULTURE.—Arranged primarily to give graduates of other schools of forestry special training in the silviculture of the forests of the South. All men taking this course should also register for Forestry 266. Prerequisite: At least one course in silviculture. 3 s.h. (w)

MR. KORSTIAN

322. SOIL CLASSIFICATION AND MAPPING.—Classification of soils as natural bodies. Mapping of soils, land use classes and forest site classes. Ordinarily one week of field study will be made of soils in either the coastal plain or mountains. Prerequisites: Forestry 261. 2 s.h. (w)

MR. RALSTON

326. ADVANCED FOREST SOILS.—Interrelations of the physical, chemical, and biological characteristics of forest and range soils. Prerequisites: analytical chemistry and Forestry 261. 3 s.h. (w)

MR. RALSTON

331. TOXICOLOGY AND USE OF INSECTICIDES.—Physical, chemical and biological properties of materials used to destroy insects. Formulation, toxicology and use are emphasized. 3 s.h. (w)

MR. ANDERSON

332. ECOLOGY OF FOREST INSECTS.—Study of the environmental factors as they influence insect population development. Both the physical and the biotic aspects are considered on the basis of field and laboratory experimental methods. Prerequisites: Forestry 231 or Forestry 232 or equivalent. 3 s.h. (w)

MR. ANDERSON

342. **ADVANCED FOREST MANAGEMENT.**—Examination and analysis of techniques employed in the management of industrial and public forests, particularly in the South; discussion of problems of large scale intensive forest management. One week is spent in field study in the South Atlantic Coastal Plain. Prerequisites: Forestry 267, 279, and 281 or equivalents. 2 s.h. (w) MR. CHAIKEN

354. **WOOD FINISHING.**—Preparation of wood and wood surfaces for application of finish coatings; the physical and chemical properties of finishing materials; equipment and methods of application; overlays, decals, and printing; laboratory control and qualitative evaluation of finished surface; finishing characteristics of various species of wood. Prerequisites: Forestry 259, 260 or equivalent; 1 year of organic chemistry also desirable. 3 s.h. (w) MR. HARRAR

356. **SEMINAR IN FOREST ECONOMICS.**—Examination and discussion of the application of economic concepts in forestry, the potential contribution of economic analysis to private and public forest management; current research in forest economics. Prerequisites: Forestry 277 and 279 or consent of the instructor; advanced courses in economics and economic theory are desirable. 2 s.h. (w)

357, 358. **RESEARCH IN FORESTRY.**—Credits to be arranged. Students who have had adequate training may do research under direction of members of the Faculty in the branches of forestry indicated under courses 301, 302 with the same prerequisites as thereunder noted. Each branch to bear the same letter designation as under Courses 301 and 302.

OTHER RELATED COURSES

In addition to the previously listed courses offered in the School of Forestry, the following courses may also be taken for credit.

BOTANY DEPARTMENT

202. **GENETICS.**—The principles of heredity, their cytological basis, and their bearing on other fields of biology. Laboratory work involves experimental breeding of the fruit fly and interpretation of data from the breeding of plants. Offered in alternate years. Prerequisites: one year of botany, zoology, or equivalent, and college algebra. 4 s.h. (w) MR. PERRY

221. **INTRODUCTORY MYCOLOGY.**—Field and laboratory study of the vegetative and reproductive structures of the fungi and slime molds. Methods of collection, isolation, propagation, and identification of the major orders as represented in the local flora. Prerequisite: A year of biological science. 4 s.h. (w) MR. JOHNSON

252. **PLANT METABOLISM.**—The physicochemical processes and conditions underlying the physiological processes of plants. Prerequisite: Botany 151 or equivalent; organic chemistry recommended. Not offered 1957-1958. 3 s.h. MR. NAYLOR

254. **PLANT WATER RELATIONS.**—A study of factors affecting the availability of water, its absorption and use in plants, and the effects of water deficits on plant processes. Assigned readings, reports, and lectures. Prerequisite: Botany 151 or equivalent. 3 s.h. (w) MR. KRAMER

256. **COMMUNITY ANALYSIS AND CLASSIFICATION.**—The development of concepts and methods in synecology and their present application to the study of plant communities. Prerequisite: Botany 156 or equivalent. 3 s.h. (E) MR. OOSTING

257. **PRINCIPLES OF PLANT DISTRIBUTION.**—Interpretation of the floristic and ecological plant geography of the world's vegetation. Prerequisite: Botany 156 or equivalent. 3 s.h. (E) MR. BILLINGS

258. **PHYSIOLOGY OF GROWTH AND DEVELOPMENT.**—Consideration of the internal factors and processes of new protoplasm and its differentiation at the cellular, tissue, and organ level in plants. Prerequisites: Botany 151 or equivalent; organic chemistry recommended. 3 s.h. (E) MR. NAYLOR

259. ENVIRONMENTAL MEASUREMENTS.—Methods of obtaining and evaluating climatological data for ecological purposes with special attention to instrumentation and microclimate. Prerequisite: Botany 156 or equivalent. 3 s.h. (E)

MR. BILLINGS

CHEMISTRY DEPARTMENT

233. INSTRUMENTAL ANALYSIS.—Experiments in the use of physical measuring instruments in chemical analysis with special attention to optical instruments. One lecture and three laboratory hours per week. Prerequisites: Chemistry 70 and one year of physics. 2 s.h. (w)

MESSRS. STROLOR, SAYLOR AND VOSBURGH

ECONOMICS DEPARTMENT

313-314. SEMINAR IN ECONOMIC THEORY.—The course consists of directed research in economic theory. The primary purpose is the correction of authoritative eclecticism and its replacement by individually integrated theory. 6 s.h. (w)

MR. HOOVER

317. SEMINAR IN DEMOGRAPHIC, POPULATION, AND RESOURCE PROBLEMS.—3 s.h. (w)

MR. SPENGLER

319. SEMINAR IN THE THEORY AND THE PROBLEMS OF ECONOMIC GROWTH AND CHANGE.—3 s.h. (w)

MR. SPENGLER

386. SEMINAR IN LATIN-AMERICAN ECONOMIC PROBLEMS.—3 s.h. (w)

MR. SMITH

COLLEGE OF ENGINEERING

158. INDUSTRIAL ENGINEERING.—A study of the industrial growth and present tendencies of productive industries as concerns the engineer. Specific topics treated are: plant location, organization, production and cost controls, and wage payment. 3 s.h. (w)

MR. LEWIS

PHILOSOPHY DEPARTMENT

241. LOGIC.—Fundamental Problems of Logic. 3 s.h. (E)

MR. CLARK

ZOOLOGY DEPARTMENT

222. ENTOMOLOGY.—Anatomy, physiology, embryology, and classification of insects. Prerequisite: one year of zoology. 4 s.h. (w)

MR. GRAY

238. SYSTEMATIC ZOOLOGY.—The fundamental theory and practice involved in the collection, identification and classification of animals. Prerequisite: Zoology 1 and 2. 4 s.h. (w)

MR. BAILEY

271. CELLULAR PHYSIOLOGY.—The physiological processes of living matter approached through studies of cells. Prerequisites: two years of biology and at least one year of chemistry. 4 s.h. (w)

MR. WILBUR

303. ECOLOGY.—Relation of animals to environment. Lectures, readings, reports, conferences; laboratory and field work. 4 s.h. (w)

MR. GRAY

THE SUMMER SESSION

First term begins June 11, 1957

Second term begins July 19, 1957

Admission



THE general requirement for admission to the Summer Session is graduation from an accredited secondary school or its equivalent. Rejection of a student's application for admission to one of the University's Colleges or Schools does not preclude admission of that student to the Summer Session as a special or unclassified student.

Admission to specific courses offered in the Summer Session is governed by the student's academic status (freshman, sophomore, junior, senior, graduate, special or unclassified) and by the pre-requisites of the course in question. Regulations governing admission and instruction as to procedure are given in the *Bulletin of the Summer Session*.

Registration



CLASSES BEGINNING JUNE 18. All Summer Session students whose classes begin on June 18, Term I, who *do not* complete registration in the Summer Session Office on or before June 15 must register in the Summer Session Office, 119 Allen Building, on June 17.

CLASSES BEGINNING JULY 1. All Summer Session students whose classes begin on July 1, Term I, must complete registration in the Summer Session Office on or before June 29.

CLASSES BEGINNING JULY 20. All Summer Session students who wish to register for courses offered during Term II or for research during Term II may register in the Summer Session Office on July 8 through July 15. All students who *do not* register for second term during this period *must* register in the Summer Session Office, 119 Allen Building, on July 19.

CLASSES BEGINNING ON OTHER DATES. All Summer Session students registering for courses beginning on dates other than those specified above must complete registration in the Summer Session Office *before* the date on which their classes begin. *Registration on the day on which classes are scheduled to begin will be considered late registration.*

Financial Information, Living Accommodations, and Medical Care



Fees

The University Fee:

- Covering registration, tuition, and medical care.....\$15.00 per semester hour
- Teachers in full-time service in Elementary and Secondary Schools..... 7.50 per semester hour
- Registered Nurses enrolled in Nursing Education courses 7.50 per semester hour

Laboratory Fees: (These where applicable are in addition to the University Fee.)

- Marine Laboratory\$ 10.00

Fees Replacing University Fee:

- Medical Mycology\$100.00

Master's Degree Summer Session Fee:

- A candidate for the Master's degree who completes in the Summer Session 15 or more semester hours required for the degree and who finishes the work in the Summer Session pays a degree fee of.....\$25.00
- A Master's degree candidate who is not required to pay the fee under Item 1 above, but who takes a thesis examination during the Summer Session, is required to pay a degree fee of.....\$10.00
- A Master's degree candidate who, in the fall or spring semesters, completes 15 or more semester hours required for the degree and who finishes the work in the Summer Session without a thesis examination is not required to pay the degree fee.

Auditing Fees:

1. Students registered for a full course program may audit non-laboratory courses (with the permission of the Director) at no extra charge.
2. Students carrying less than a full course program may be granted permission to audit a course or courses on payment of half the University fee per semester hour audited.....\$7.50 per s.h.

Late Registration Fee:

- Students who fail to register prior to the first class day of a given course will pay an extra fee of.....\$ 5.00

Fee for Course Changes:

- Course changes other than those required by the University will be made only on payment of an extra fee of.....\$ 1.00

Fee for Make-up Final Examination:.....\$ 3.00

Refund of Fees:

- a. When applications for withdrawal are received by the Director of the Summer Session before the close of registration on registration day, full fees will be refunded.
- b. When applications for withdrawal are received by the Director of the Summer Session during the first four class days of a given term 80 per cent of the fees will be refunded.
- c. When applications for withdrawal are received by the Director of the Summer Session after the fourth class day there will be no refund of fees.

Academic Regulations



Kinds of Course Enrollment

SUMMER SESSION courses may be taken for "credit" or for "non-credit" or may be "audited." A student's program may be exclusively in one of these categories, or may combine any two of them or all three. Students taking a full or partial program for "credit" may enroll as auditors or as non-credit students in any number of additional courses.

CREDIT. The Summer Session term "credit" does not mean degree credit at Duke University unless the student has been admitted as a degree candidate by one of the colleges or schools of the University. A student taking a course for credit is expected to do all the work required and to take the final examination, and he will receive a grade. G.I. Bill benefits are available only to those veterans who enroll for credit.

NON-CREDIT. "Non-credit" enrollment is available to the student who wishes the privilege of participating in class discussions, exercises, and laboratory assignments but does not wish to take the examinations either mid-term or final. A "non-credit" student may do as much of the work of the course as he desires, but he may not take the final examination and he will not receive a grade. Full fees of \$15.00 per semester hour are required in "non-credit" enrollment.

AUDIT. An auditor is entitled to listen to lectures and class discussions, but he may not participate in discussions or take examinations. Students may not enroll as auditors in laboratory courses. A student carrying a full program for credit may be given permission to audit as many courses as he desires without additional fees. Students carrying less than a full program for credit may secure permission to audit but are required to pay the auditing fee of \$7.50 per semester hour.

Eligibility for Course Enrollment

Courses numbered 1-49 are primarily for freshmen, or freshmen and sophomores. Courses numbered 50-99 are ordinarily for sophomores, or sophomores and juniors. Courses numbered 100-199 are designed for juniors and seniors. Courses numbered 200-299 are planned for seniors and graduates. Courses numbered from 300 up admit graduate

students only. Courses numbered from 200 up are limited in enrollment to 25 students.

Credits Allowed in Summer

The Summer Session courses are of the same quality and credit value as courses in the regular semester. Credit earned in the Summer Session is in terms of semester hours. The majority of Summer Session courses carry 3 semester hours' credit and require one term in residence. A limited number of basic courses in the sciences carry 4 s.h. credit (Chemistry, Geology, Physics, Zoology). Some introductory foreign language courses are given on an intensive basis. A 3 s.h. course in these introductory language courses will constitute the student's full load for half of the term. A limited number of courses in Nursing Education are given on an intensive basis.

The Normal Course Program

The normal and maximum program for one term of the Summer Session is 6 semester hours. The 4 semester hour courses in the sciences run for four weeks and one such course constitutes a full course program. Four semester hours courses do not meet on Saturdays.

Grading

Only a student taking a course for credit will receive a grade. The grade given represents the quality of the work done in the course.

PASSED.

Undergraduate Grades: A, excellent; B, good; C, average; D, poor but passing. *Graduate Grades:* E, exceptional; G, good; S, satisfactory.

FAILED. A grade of F indicates that the student has failed the course, and in order to receive credit for the course he must repeat the work in class.

INCOMPLETE. A grade of I may be reported by the instructor if for any reason he is unable to report the final grade at the regular time. Incomplete courses must be completed before the close of the succeeding semester; otherwise the I is recorded as F, and the course must be repeated in class if the student is to receive credit for it.

ABSENT FROM FINAL EXAMINATION. The grade X indicates that the student was absent from the regularly scheduled examination.

Graduate Study in the Summer Session



A STUDENT who holds a bachelor's degree and who desires to take advanced courses at the 200-level for professional or other reasons but not for the purpose of earning an advanced degree at Duke University should apply to the Director of the Summer Session for admission as a special or unclassified student. Credit earned while the student is so enrolled is counted as unclassified credit but *not* as credit toward an advanced degree.

A student who wishes to work for an advanced degree at Duke University must apply to the Dean of the Graduate School for admission to the Graduate School of Arts and Sciences. Upon securing admission the student registers with both the Summer Session Office and the Graduate School Office during the official registration period.

In order that application to the Graduate School for summer work be given due consideration, the student should submit all required documents to the Dean of the Graduate School by the date of June 1 preceding the first term, and by the date of July 10 preceding the second term of the Summer Session. It is difficult to process properly applications received after these dates. No student may register with the Graduate School until an application has been completed and admission has been granted.

The Ph.D. and Ed.D. Degrees

STUDY FOR THE PH.D. DEGREE: Students who are interested in working toward a Ph.D. degree should note in detail the requirements as outlined in the *Bulletin* of the Graduate School of Arts and Sciences. Of the three years required as minimum residence, not more than one year can be earned in Summer Sessions. Full-time enrollment for one term of the Summer Session is counted as one-fifth of an academic year.

STUDY FOR THE ED.D. DEGREE: Students who are interested in working toward an Ed.D. degree should consult the detailed statement in the *Bulletin* of the Graduate School of Arts and Sciences. Requests for specific information regarding residence and programs for the Ed.D. degree should be sent to the Director of Graduate Studies, Department of Education.

Requirements for the Master of Arts Degree

LANGUAGE REQUIREMENTS: The candidate for the A.M. degree must have a reading knowledge of at least one foreign language. (The several departments reserve the right to specify which foreign languages are acceptable.) The language requirement may be satisfied in either of two ways: (1) by successfully passing an examination, officially conducted by the appropriate foreign language department at Duke University, or (2) by a transcript showing the completion of the third college year of one language, or the second college year of each of two acceptable foreign languages.

If the student must take the examination to satisfy this requirement, he may request—should he feel well qualified—the language examination required of candidates for the Ph.D. degree. By passing this examination, he may satisfy the requirements for both degrees at one time.

MAJOR AND MINOR SUBJECTS: As a prerequisite to graduate study in his major subject, the student must have completed a *minimum* of 12 semester hours of approved college courses in that subject, and 12 additional semester hours in that subject or in related work. Since some departments have specific requirements for undergraduate preparation the student should read carefully the special requirements listed by his major department, which are included as headnotes to the course offerings in the *Bulletin* of the Graduate School.

To complete the course requirements for the A.M. degree, the student must take 24 semester hours of graduate courses, of which at least 12 must be in the major subject. Of the remaining 12, he must take 6 hours of course work in a minor subject, leaving 6 hours of course work to be taken in either the major or minor field, or in another field approved by the major department and the Dean of the Graduate School. In addition to the course work, the student must present a thesis which carries a credit of 6 semester hours. Thus, the total credit required for the A.M. degree amounts to 30 semester hours.

THE THESIS FOR THE MASTER OF ARTS DEGREE: The thesis for the A.M. degree should demonstrate the student's ability to collect, arrange, interpret or report pertinent material on his special research problem. Although a publishable document is not required, the thesis must be written in a literate style, and should exhibit the student's competence in scholarly methods and procedures.

REGULATIONS AND PROCEDURES: On or before June 26 or July 31 (see calendar) of the summer in which it is expected the degree will be conferred, the student must file the final title of the thesis with the Dean of the Graduate School. Official blanks are provided for this purpose.

Four bound, typewritten copies of the thesis must be submitted, in approved form, to the Dean of the Graduate School at least three to five days before the date of the thesis examination. The copies will then be distributed to the several members of the examining committee.

THE EXAMINING COMMITTEE AND THE EXAMINATION: After consultation with the professor who has directed the thesis, the Dean of the Graduate School appoints an examining committee composed of the director of the thesis and two other members of the Graduate Faculty. The candidate appears before this committee for an examination, which lasts for about one and one-half hours. The subject matter covered in the examination is usually restricted to the thesis and to the major field.

If the candidate passes his examination, the examining committee certifies to this fact by signing the title page of the thesis. The candidate then returns the original and one carbon copy of the thesis to the Dean of the Graduate School for deposit in the University Library.

Requirements for the Master of Education Degree

PREREQUISITES: The degree of Master of Education is granted ordinarily only to teachers or to others engaged in educational work.

Before a student is admitted to graduate study for this degree, he should have completed, on the undergraduate level, a minimum of 18 semester hours of approved work in Education, including courses in Educational Psychology, and courses in the History of Education, Educational Sociology, or School Administration.

REQUIREMENTS FOR THE DEGREE: The M.Ed. degree may be earned either with or without the presentation of a thesis.

WITHOUT THESIS: Students who elect this plan must present a total of 30 semester hours. Eighteen hours of this work must be taken in the Department of Education, which includes a departmental major (i.e., in Nursing Education, Elementary Education, Public School Administration, Public School Supervision, or Secondary Education) of at least 12 semester hours.

At least six semester hours are devoted to a minor in a department other than Education, and six hours may be taken either in the Department of Education, the minor department, or another department approved by the major department.

Toward the end of his residence the student must pass a comprehensive examination on his departmental major. Permission to take such examinations must be obtained from the Director of Graduate Studies of the Department of Education, and a notice of intention

must be filed with him at least three weeks before the announced dates of the examinations.

WITH THESIS: Students who elect this plan are permitted to substitute a thesis for 6 semester hours of the required course work. The student must present a thesis subject approved by the professor who is to direct it, by the Director of Graduate Studies in Education, and by one other member of the staff of the Department of Education. Two of the three members of the approving committee must be permanent members of the Duke University Graduate Faculty. The title of the thesis must be filed with the Dean of the Graduate School at the same time as the titles for the A.M. theses.

In addition to the thesis, the student must present 24 semester hours of course credit. Of the 24 hours, 18 must be taken in the student's major department. The minor requirement is satisfied by 6 semester hours of course work taken outside of the Department of Education.

The regulations regarding submission of typed copies of the thesis and the thesis examination are the same as those for the A.M. degree.

Requirements for the Master of Arts in Teaching Degree

PREREQUISITES: The degree of Master of Arts in Teaching is designed for both teachers in service and recent graduates of liberal arts colleges who wish to enter public school teaching.

A student should normally have completed a minimum of 12 semester hours in his proposed major subject and an additional 12 semester hours in the major or related subjects. In the event that a student wishes to undertake a graduate major different from the undergraduate major, the prerequisites are possible of modification upon the recommendation of the student's committee and the approval of the Dean of the Graduate School.

PROGRAMS FOR THE DEGREE: One of two programs may be arranged, in consultation with the student's committee: (1) A major in Education of 18 to 24 semester hours and 6 to 12 semester hours in non-education courses. (2) A major in non-education courses of 18 to 24 semester hours and 6 to 12 semester hours in Education. In both programs a minimum of 30 semester hours is required, except when Education 215 and 216 are taken, in which case a minimum of 36 semester hours is required.

The non-education courses are to be taken in one or more subjects ordinarily taught in the secondary schools. The amount and distribu-

tion of this work will be determined by the needs of the individual student.

The Master of Arts in Teaching may be earned with or without the presentation of a thesis. If a student, in consultation with his committee, elects to present a thesis, 6 semester hours of the total of 30 semester hours required will be allotted to thesis research. He will then be required to complete 24 semester hours of course credits. The regulations concerning the writing and submission of the thesis, and the examination of it, are the same as those governing the thesis for other masters' degrees offered in the Graduate School.

NEW PROGRAM FOR MASTER OF ARTS IN TEACHING WITH INTERNSHIP: A limited number of selected graduates of liberal arts colleges who desire to prepare for high school teaching will be admitted to a special internship program at Duke University. The program combines graduate study in professional education and liberal arts with a half-year of full-time, paid teaching experience. Successful completion of the program will qualify a candidate for the degree of Master of Arts in Teaching.

Candidates will normally begin the program at the opening of the first summer session of 1957 and complete it in June, 1958. A few persons will be allowed to begin the program in the fall of 1957 and complete it in August, 1958. Candidates will spend the summer and one of the semesters of the succeeding school year in residence at the University. During the other semester they will be employed as regular teachers in a cooperating public school system. During this semester they will receive full salary and will work under the joint supervision of the public school and the University. The program will meet training qualifications for the advanced, or graduate, teacher's certificate in most states.

The salary for the semester of teaching will, in effect, constitute a substantial award to candidates selected for the program. Applicants will be considered, as are candidates for other awards, on a competitive basis. The best qualified applicants will be chosen on the basis of undergraduate record, recommendations, and evidence of interest in becoming high school teachers. It is desirable, but not required, that applicants arrange to be interviewed in connection with their applications for the program. Application forms may be secured by addressing a request to the Dean of the Graduate School, Duke University, Durham, North Carolina. Completed forms, together with all supporting documents, must be returned to the Dean of the Graduate School not later than March 1, 1957. Details concerning the program can be obtained by writing the Chairman, Department of Education, Duke University.

THE COMMITTEE: Each candidate for the degree will be as-

signed a committee, appointed by the Dean of the Graduate School, to plan his program of study.

This committee will consist of three members, at least one of whom will be from the Department of Education, and at least one from another department. The chairman of the committee will normally be chosen from the department of the major.

REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE: The requirements for the M.S. degree are the same as those for the A.M. degree except that there is no language requirement.

CANDIDACY FOR THE MASTER'S DEGREE: To be considered as a candidate for a Master's degree (A.M., M.Ed., M.A.T., M.S.) the graduate student must (1) have made passing grades in all courses taken during the first period of residence (If he registers for fewer than 12 semester hours of graduate courses during his first period of residence, he must make passing grades on the initial 12 hours of graduate courses), (2) have made a grade of "G" or "E" on at least 3 semester hours of this work, and (3) have received the approval of the major department (or in the case of the M.A.T., of the supervisory committee).

If he does not fulfill these conditions on the initial semester hours, but does better work, signified by a substantial number of "G's" or "E's" in a subsequent term, he may be granted permission then to re-apply for candidacy. The requirements for admission to candidacy for the M.Ed., the M.A.T., and the M.S. degrees are the same as those stated above for the Master of Arts degree.

TRANSFER OF CREDITS: Under certain circumstances a maximum credit of 6 semester hours may be allowed for graduate courses completed elsewhere. Approval for the transfer of credits will not be given until the student has spent one semester in residence. The acceptance of credit up to this amount will not reduce the minimum period of full-time registered residence at Duke University. In no case will credit be allowed for extension or correspondence courses.

With the approval both of the student's major department and the Dean of the Graduate School, a student who is granted such transfer credit may be permitted to register for as much as 12 semester hours of thesis research instead of the usual 6 semester hours. Or he may be permitted to fill out his schedule with as much as 6 semester hours of further undergraduate training or 6 semester hours of required language courses on the undergraduate level.

TIME LIMITS FOR COMPLETION OF THE MASTER'S DEGREE: The candidate for any Master's degree must complete all requirements within a period of six calendar years from the date of his initial registration. Credits earned over a longer period of time cannot be credited toward a degree.

Courses of Instruction



Minimum Enrollment Required for Courses

ALL courses are offered subject to minimum enrollments. The University reserves the right to withdraw undergraduate courses in which fewer than twelve students enroll, senior-graduate courses numbered 200-299 in which fewer than ten students enroll, and graduate courses and seminars numbered 300 or above in which fewer than six students enroll. In withdrawing a course, the University attempts to avoid undue hardships on students. Sometimes, therefore, courses are offered in spite of small enrollments. Courses not listed will be given when a demand develops and an instructor is available.

Department Officers and Regulations

Departments offering Summer Session programs are listed alphabetically. Under each department is given the name of the chairman and the name of the director of graduate studies. Where departments have set up special regulations for admission to candidacy for the Master's degree, these are included.

BOTANY

PROFESSOR HENRY J. OOSTING, CHAIRMAN—102 BIOLOGY BUILDING (WEST CAMPUS);
PROFESSOR PAUL J. KRAMER, DIRECTOR OF GRADUATE STUDIES—
04 BIOLOGY BUILDING (WEST CAMPUS)

For admission to candidacy for the Master's degree in Botany, students must have completed a minimum of eighteen semester hours of biological science, including six semester hours of botany in courses numbered above 100. Students who have not yet had the minimum eighteen hours, however, may enter higher courses by permission of the instructor, if he is convinced that they can carry the work for undergraduate credit and may count such work toward the eighteen hours necessary for candidacy.

FIRST TERM

S225. SPECIAL PROBLEMS.—Hours to be arranged.
S359. RESEARCH.—Hours to be arranged.

STAFF
STAFF

FIRST TERM (Marine Laboratory, Beaufort, North Carolina)

S207. MARINE MYCOLOGY.—Introduction to the structure, classification culture, and physiology of marine and brackish water fungi. Special problems on groups or individual species. Lectures, laboratory, field trips, introduction to periodical literature, and individual investigations. 6 s.h.

MR. JOHNSON

S225. SPECIAL PROBLEMS.—Hours to be arranged.
S359. RESEARCH.—Hours to be arranged.

MR. JOHNSON
MR. JOHNSON

SECOND TERM

S225. SPECIAL PROBLEMS.—Hours to be arranged.

STAFF

S359. RESEARCH.—Hours to be arranged.

STAFF

SECOND TERM (Duke Marine Laboratory, Beaufort, North Carolina)

S225. SPECIAL PROBLEMS.—Hours to be arranged.

MR. JOHNSON

S359. RESEARCH.—Hours to be arranged.

MR. JOHNSON

CHEMISTRY

PROFESSOR J. H. SAYLOR, CHAIRMAN—115 CHEMISTRY BUILDING (WEST CAMPUS);

PROFESSOR CHARLES K. BRADSHAW, DIRECTOR OF GRADUATE STUDIES—

124 CHEMISTRY BUILDING (WEST CAMPUS)

All classes in Chemistry, Term I, will begin on June 18 and continue through July 16. All classes in Chemistry, Term II, will begin on July 22 and continue through August 16. Students who wish to avoid paying a late registration fee must have their registration completed in advance of these dates.

FIRST TERM

S1. GENERAL INORGANIC CHEMISTRY.—Lectures, recitations, and laboratory work on the elementary principles of chemistry and on the occurrence, preparation, properties, and uses of the elements and their compounds. Recitation daily, 8:00-9:00; laboratory daily, 9:00-12:00; lecture daily, 12:00-1:00. 4 s.h. MR. BRICE

S61. FUNDAMENTALS OF ANALYTICAL CHEMISTRY.—A study of the relations of electrolytes in solution and of chemical equilibrium illustrated by laboratory experiments involving the techniques of gravimetric, volumetric, and colorimetric analysis. Prerequisites: Chemistry 1-2 and Mathematics 6 or equivalent. Lecture or recitation daily, 8:30-10:00; laboratory daily, 10:30-12:30 and 1:30-4:00. 4 s.h. MR. WILDER

S151. ORGANIC CHEMISTRY.—An introduction to the study of carbon compounds. Compounds of the aliphatic series form the basis of lectures, discussions and laboratory experiments. Prerequisite: Chemistry S61. Recitation daily, 8:00-9:00; laboratory daily, 9:00-12:00; lecture daily, 12:00-1:00. 4 s.h. MISS BROWN

S275. THESIS RESEARCH.—Research in the fields of physical, analytical, inorganic, or organic chemistry. Open to those students whose research programs for the A.M. and Ph.D. degrees have been approved by the department and by one of the instructors in charge of the course. Schedule to be arranged. (Not more than one semester hour of credit per week for full-time schedule or one semester hour each two weeks for half-time schedule.) 2 to 8 s.h. Available Term I and II. STAFF

SECOND TERM

S2. GENERAL INORGANIC CHEMISTRY.—A continuation of S1. Prerequisite: Chemistry S1. Recitation daily, 8:00-9:00; laboratory daily, 9:00-12:00; lecture daily, 12:00-1:00. 4 s.h. MR. HAMRICK

S152. ORGANIC CHEMISTRY.—A study of compounds of the aromatic series and of carbohydrates and proteins. Prerequisite: Chemistry S151. Recitation daily, 8:00-9:00; laboratory daily, 9:00-12:00; lecture daily, 12:00-1:00. 4 s.h. MR. VINGIELLO

ECONOMICS

PROFESSOR CALVIN B. HOOVER, CHAIRMAN; ASSOCIATE PROFESSOR LLOYD SAVILLE, ACTING EXECUTIVE OFFICER OF THE DEPARTMENT—203H SOCIAL SCIENCE BUILDING (WEST

CAMPUS); PROFESSOR ROBERT S. SMITH, ACTING DIRECTOR OF GRADUATE STUDIES

203E SOCIAL SCIENCE BUILDING (WEST CAMPUS)

FIRST TERM

S51. PRINCIPLES OF ECONOMICS.—A course in the essential principles of economic science. (This course will not count as a part of the minimum economics

requirements for graduation until the equivalent of S52 has been completed. Credit for Ec. S51 will not be given until Ec. 52 has been completed.) 11:00-12:20. 3 s.h.

MR. SAVILLE

S57. PRINCIPLES OF ACCOUNTING.—Elementary principles of single proprietorship, partnership, and corporation accounting. June 12-June 29. 7:40-12:20. 3 s.h.

MR. SHIELDS

S58. PRINCIPLES OF ACCOUNTING.—A continuation of Economics S57. July 1-July 17. 7:40-12:20. 3 s.h.

MR. SHIELDS

S153. MONEY, CREDIT AND BANKING.—This course begins with a study of the nature, characteristics, and functions of money, credit, and the commercial banking system. It covers also the history of commercial banking in the United States; the foundation, organization, and functions of the Federal Reserve System; the supervision and control of commercial banks; deposit insurance; and the value of money. 7:40-9:00. 3 s.h.

MR. SAVILLE

S171. ADVANCED ACCOUNTING.—Advanced accounting theory and practice applied to the managerial problems of valuation and operation in corporations, consolidations, mergers, and liquidations. Open to students who have completed Accounting 57-58. June 12-June 29. 7:40-12:20. 3 s.h.

MR. BLACK

S172. ADVANCED ACCOUNTING.—A continuation of Economics S171. July 1-July 17. 7:40-12:20. 3 s.h.

MR. BLACK

S186. LATIN-AMERICAN ECONOMICS.—Facts and factors in the economic structure and growth of the Latin-American nations; population, labor productivity, and standards of living; problems of industry, agriculture, and mining; transportation and public utilities; monetary and fiscal policies; the migration of capital; economic thought and institutions. 11:00-12:20. 3 s.h.

MR. SMITH

S232. THE ECONOMIC HISTORY OF THE UNITED STATES.—A study of the agricultural, industrial, commercial, and financial progress of the United States from colonial times to the present day. 9:20-10:40. 3 s.h.

MR. SMITH

S318X. THESIS SEMINAR.—Hours to be arranged.

MR. SMITH

SECOND TERM

S52. PRINCIPLES OF ECONOMICS.—A continuation of Economics S51. 11:00-12:20. 3 s.h.

MR. LANDON

S105. INDUSTRIAL MANAGEMENT.—This course deals primarily with the elements and problems of managing the operations of an industrial firm. Topics treated include the functions and responsibilities of management, qualities required in executives, organization, location, the physical plant, materials control, the planning and control of operations, industrial and market research, personnel, budgeting, purchasing, and records and reports. 7:40-9:00. 3 s.h.

MR. LANDON

S143. CORPORATION FINANCE.—Principles and problems in the financial organization of corporations; the study of corporate securities, the management of capital, the distribution of earnings; industrial combinations; insolvency and reorganization. (Though not a prerequisite, Economics 57-58, Principles of Accounting, or Economics 60, General Accounting, are recommended to students electing this course.) 9:20-10:40. 3 s.h.

MR. JOERG

S155. LABOR PROBLEMS.—An examination of present-day labor problems followed by an intensive study of methods used by employers and workers in meeting those problems. 11:00-12:20. 3 s.h.

MR. CARTTER

S181. BUSINESS LAW.—The fundamental principles of law as applied to routine business transactions. The topics presented are: contracts, negotiable instruments, forms of business organizations. 7:40-9:00. 3 s.h.

MR. JOERG

S257. DYNAMICS OF THE LABOR MOVEMENT.—A study of the forces which have shaped the growth of the labor movement. Special emphasis on the origin of

modern trade unionism, relating its growth with Western philosophic developments, and with the changing economic and social structure of society in Europe and America. 9:20-10:40. 3 s.h. MR. CARTTER

S318X. THESIS SEMINAR.—Hours to be arranged.

MESSRS. LANDON AND CARTTER

EDUCATION

PROFESSOR WILLIAM H. CARTWRIGHT, CHAIRMAN—08D WEST DUKE BUILDING (EAST CAMPUS); PROFESSOR EDWARD C. BOLMEIER, DIRECTOR OF GRADUATE STUDIES—06B WEST DUKE BUILDING (EAST CAMPUS)

For admission to candidacy for the Master of Arts (A.M.) degree with major in Education, or for the Master of Education (M.Ed.) degree, students must, in addition to meeting the general requirements for admission to the Graduate School, meet the following specific requirements: Credit for (1) eighteen semester hours of acceptable prior work in Education and (2) twelve semester hours of acceptable prior work in a minor field. If Psychology, Sociology, Economics, or Political Science is chosen for the minor, six semester hours of work completed after entering the Junior year in college will be accepted.

The degree of Master of Arts is available in the divisions of School Administration and Supervision, Secondary Education, Elementary Education, and Guidance and Counseling. Every candidate for the Master of Arts degree in the Department should elect at least twelve semester hours in one of these divisions in which he plans to write his thesis and the remainder of his work, including the six semester hours in his minor, with the approval of the proper division adviser. The degree of Master of Education is available in the divisions of School Administration and Supervision, Secondary Education and Elementary Education. Mr. Bolmeier, Mr. Hurlburt, and Mr. Stumpf are advisers to students in School Administration and Supervision; Mr. Carr, Mr. Petty, and Miss Rudisill are advisers in Elementary Education; Mr. Bolmeier, Mr. Cartwright, and Mr. McLendon are advisers in Secondary Education; and Mr. Colver, Mr. Gehman, and Mr. Weitz are advisers in Guidance and Counseling. Mr. Cartwright and Mr. McLendon are advisers for the Master of Arts in Teaching program. Candidates for the Master of Arts, Master of Education, or Master of Arts in Teaching degree should read with special care the regulations of the Graduate School. Candidates for the Master of Arts in the field of guidance should consult the special brochure on guidance available from the Dean of the Graduate School.

It is the intention of the Department to make available to degree candidates all courses ordinarily required for certification as graduate teachers, counselors, principals, and superintendents. These courses will normally be offered at least once every three years.

SHORT-TERM COURSES

(The following four courses will be offered in succession during periods indicated. Each will carry three semester hours of credit and will normally constitute a full load of work. See page 19 for information concerning how to register for courses meeting other than for regular term.)

S230. THE JUNIOR HIGH SCHOOL CURRICULUM.—Principles and practices of curriculum development for adolescent Americans in our schools. Current trends and emerging needs within our cultural context will be stressed. June 11-June 29. 9:20-10:40 and 11:00-12:20. 3 s.h. MR. AUSTIN

S266. SCIENCE IN THE ELEMENTARY SCHOOL.—Presentation of basic concepts in natural and physical science through selected readings, the use of simple experiments and demonstrations, construction and use of equipment, and field studies. June 11-June 29. 9:20-10:40 and 11:00-12:20. 3 s.h. MISS PHILPOTT

S203. PRINCIPLES OF SCHOOL ADMINISTRATION.—The fundamental facts and procedures of school administration, an analysis of the problems and policies of the organization and direction of a local school system, and the functions of the

various school officials. Prerequisites: Education 103 and 88, or six semester hours of equivalent work in education. July 1-July 17. 9:20-10:40 and 11:00-12:20. 3 s.h.

MR. HURLBURT

S222. THE CURRICULUM AND MATERIALS OF THE ELEMENTARY GRADES.—A study of curriculum problems in the elementary schools. July 19-August 6. 9:20-10:40 and 11:00-12:20. 3 s.h.

MR. HURLBURT

FIRST TERM

S88. EDUCATIONAL PSYCHOLOGY: LEARNING AND MEASUREMENT.—This course and Education 118 constitute a general introduction to the field of Educational Psychology. This course deals with (1) the psychology of learning, including: the nature of the learning process, general principles or laws of learning, the course of learning and forgetting, factors influencing efficiency in learning and retention and the transfer of training; and (2) measurement, including: the basic concepts in the measurement of intelligence, standardized achievement tests, the extent and significance of individual differences in ability and performance. Opportunity will be afforded for examination and study of a variety of tests of intelligence and achievement.

S88.1. 7:40-9:00. 3 s.h.

MR. CHILDS

S88.2. 9:20-10:40. 3 s.h.

MR. COLVER

S201. TEACHING AND SUPERVISION OF ARITHMETIC.—This course gives special attention to the number system, the fundamental operations (with whole numbers, fractions, and decimals), percentage and measurements. The course will consider the meaning theory, methods of teaching, problem solving, evaluation, practice and drill, and selection and gradation of arithmetical contents. The course is designed for teachers and supervisors in the elementary school. 7:40-9:00. 3 s.h.

MR. PETTY

S205. CURRICULUM PROBLEMS IN SECONDARY EDUCATION.—A consideration of the aims and objectives of secondary-school subjects, emphasizing practical problems of curriculum-making in the high school. 9:20-10:40. 3 s.h.

MR. CHILDS

S211. THE PROBLEM CHILD (also Psychology S211).—Study of problem behavior and adjustment in children with emphasis on the causes and treatment of conduct and neurotic disorders of the maladjusted child. Particular attention will be paid to mental hygiene principles in the handling of problem children in school and home. 11:00-12:20. 3 s.h.

MR. BORSTELMANN

(See also Psychology S232, PERSONALITY AND PHYSICAL HANDICAP.)

S217. THE PSYCHOLOGICAL PRINCIPLES OF EDUCATION.—An advanced study of teaching, learning, and the learner. Selected problems guiding the reading of students will be discussed in class. Open to graduate students only. 9:20-10:40. 3 s.h.

MR. WEITZ

S224. TEACHING THE SOCIAL STUDIES IN ELEMENTARY SCHOOLS.—This course will treat objectives, curriculum trends, methods, and materials in elementary-school social studies. Topics to receive emphasis include unit-planning, use of the textbook, the reading program, using community resources, audio-visual materials, dealing with controversial issues, teaching time and place concepts, and evaluation. Opportunity will be provided for teachers to work on their own school problems in the social studies. 9:20-10:40. 3 s.h.

MR. CARTWRIGHT

S234. SECONDARY-SCHOOL ORGANIZATION AND ADMINISTRATION.—This course is designed especially for principals, teachers, and other prospective members of the secondary-school staff. The scope of secondary education is considered to encompass junior high school, regular high school, senior high, and junior college. Special treatment is given to the problems of internal organization and management. 7:40-9:00. 3 s.h.

MR. BOLMEIER

S235. THE NATURE, FUNCTION, AND REORGANIZATION OF THE CURRICULUM.—Selected problems guiding the reading of students. Open to graduate students only. 7:40-9:00. 3 s.h. Mr. CARTWRIGHT

S239. METHODS AND PROBLEMS OF TEACHING ENGLISH IN SECONDARY SCHOOLS.—This course will present methods of teaching the reading of literature and other forms of writing, language, grammar and composition. Materials will include selections found in widely adopted textbooks, numerous specimen themes for grading, and current books and articles in the field. Several short compositions and a report will be required. 11:00-12:20. 3 s.h. Mr. BOWMAN

S240. EDUCATIONAL AND OCCUPATIONAL INFORMATION.—A study of the sources of occupational and educational information; methods of securing and organizing occupational information; methods of providing vocational and educational information to students through career days, college conferences, class activities, and individual counseling; methods of making job analyses and community occupational surveys. 7:40-9:00. 3 s.h. Mr. COLVER

S253. SCHOOL LAW.—The primary purpose of this course is to familiarize school administrators and teachers with the legal features of school organization and administration. Although some attention is given to constitutional and statutory provisions, the main emphasis is upon court decisions relating to education. Students are expected to select appropriate problems in school law for intensive study. 9:20-10:40. 3 s.h. Mr. BOLMEIER

S258. EDUCATIONAL MEASUREMENTS.—A critical study of the principles and techniques involved in measurement in education, with opportunity for individual research. Prerequisite: twelve semester hours in the Department, including a course in educational psychology. 11:00-12:20. 3 s.h. Mr. WEITZ

SECOND TERM

S118. EDUCATIONAL PSYCHOLOGY: PSYCHOLOGICAL DEVELOPMENT.—This course traces the psychological development of the individual from infancy to maturity. The principal topics considered are: the interdependence of hereditary and environmental factors in development, the nature of the developmental process, the establishment of the early basic patterns of behavior, changes and conditions producing these changes throughout childhood and adolescence to maturity, and the origin and treatment of minor behavior disorders. Not open to students who have had Psychology 121 or 126. Prerequisite: three semester hours in psychology or educational psychology. 7:40-9:00. 3 s.h. Mr. NANIA

S204. THE SCHOOL AS AN INSTITUTION.—The place of the school in society, its history and philosophy. Selected problems guiding the reading of students will be discussed in class. Open to graduate students only. 9:20-10:40. 3 s.h.

Mr. McLENDON

S210. INTRODUCTION TO EDUCATIONAL RESEARCH.—The general purpose of this course is to give the student an overview of research, acquaint him with the nature of research processes, and develop within him an appreciation of the essential characteristics of good research. Open to graduate students only. 11:00-12:20. 3 s.h. Mr. STUMPF

S226. TEACHING READING IN THE ELEMENTARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to developmental and remedial programs. 11:00-12:20. 3 s.h. Miss RUDISILL

S228. IMPROVEMENT OF INSTRUCTION IN THE SOCIAL STUDIES.—An advanced treatment of curriculum, methods, and materials in the social studies. Individuals will concentrate on subjects and grade levels of their choice. 7:40-9:00. 3 s.h. Mr. McLENDON

S236. TEACHING READING IN THE SECONDARY SCHOOL.—A study of the nature of the reading process and of principles, methods, and materials for the development of effective reading attitudes and skills as applied both to develop-

mental and remedial programs. The course provides practice with secondary-school children suffering reading retardation, including testing, diagnosis, and daily remedial teaching during a six-week period. For secondary-school teachers of all subjects who wish to improve the reading and study habits of their students. 9:20-10:40. 3 s.h. Miss RUDISILL

S243. PERSONALITY DYNAMICS.—A study of personality structure and dynamics with emphasis upon the implications for counseling and instruction. Prerequisite: 6 hours of psychology or educational psychology. 7:40-9:00. 3 s.h. Mr. GEHMAN

S244. COUNSELING TECHNIQUES.—A study of individual counseling techniques including diagnosis, interviewing, program planning, and counseling evaluation. Prerequisite: Education 242 and 243 or equivalent, which may be taken concurrently. 9:20-10:40. 3 s.h. Mr. GEHMAN

S323. PUBLIC SCHOOL FINANCE.—A study of educational costs, sources of revenue for the support of public education, collection of revenue, basis of distribution, and accounting for funds spent. 7:40-9:00. 3 s.h. Mr. STUMPF

NURSING EDUCATION

A DIVISION OF THE DEPARTMENT OF EDUCATION

MISS THELMA INGLES, M.A., DIRECTOR OF THE DIVISION OF NURSING EDUCATION—

HANES HOUSE (WEST CAMPUS) (ON LEAVE UNTIL JULY, 1957); MRS.

HALINA GOLDSMITH, M. L. (ACTING DIRECTOR UNTIL JULY,

1957)—HANES HOUSE (WEST CAMPUS)

FIRST TERM

S116N. NURSING EDUCATION: PRINCIPLES AND PRACTICES.—The second half of Nursing Education 115N-116N, a continuation of the principles of teaching applied to the nursing school situations and the planning and evaluation of instruction. Prerequisite: 115N. Hours to be arranged. 4 s.h. Miss JACOBANSKY

S120N. NURSING EDUCATION: PROBLEMS IN NURSING CARE.—Each student works on an individual problem designed to improve the nursing care of patients. Prerequisites: 131 N and 132 N. Hours to be arranged. 3 s.h. Mrs. GOLDSMITH

SECOND TERM

S136N. SEMINAR IN MEDICAL OR SURGICAL SPECIALTY.—Directed study in a medical or surgical specialty. Each student works on a problem of major interest to her—such as care of the patient with cancer or care of the patient with heart disease. Individual research in the collection of original material. Prerequisites: 134N and 135N. Hours to be arranged. 3 s.h. Miss INGLES

ENGINEERING

PROFESSOR WALTER J. SEELEY, DEAN OF THE COLLEGE OF ENGINEERING

135 ENGINEERING BUILDING (WEST CAMPUS)

FIRST TERM

C.E.S110. PLANE SURVEYING.—Use of instruments; transit, stadia, and compass surveying; determination of meridian by observation on Polaris; differential and profile leveling; setting grade stakes; calculation of bearings, latitudes, departures and areas; methods of plotting; survey and plot of portions of campus by stadia, and transit and tape; care and adjustment of instruments. Prerequisites: trigonometry; engineering drawing desirable. (Four weeks, eight hours a day.) Instruction begins on June 12 and continues through July 9. 8:00-12:00, 1:00-5:00. 4 s.h. (See Forestry.) Mr. ARGES

ENGLISH

PROFESSOR CHARLES E. WARD, CHAIRMAN—323 ALLEN BUILDING (WEST CAMPUS)

PROFESSOR BENJAMIN BOYCE, DIRECTOR OF GRADUATE STUDIES—
401 ALLEN BUILDING (WEST CAMPUS)

Candidates for the Master's degree in English are expected to have had at least twelve semester hours in undergraduate courses above the Sophomore level. The Department may also require additional courses if the work of the student in his first term indicates inadequate preparation.

FIRST TERM

S1. ENGLISH COMPOSITION.—A course in the fundamentals of English Composition, oral and written, with special attention to sentence structure, syntax, common errors, etc. Frequent themes. 11:00-12:20. 3 s.h. MR. KOTTLER

S2. ENGLISH COMPOSITION.—A continuation of course S1. 9:20-10:40. 3 s.h. MR. KOTTLER

S55. REPRESENTATIVE WRITERS.—Chaucer's Prologue to *The Canterbury Tales* and at least two tales, Shakespeare's *Henry IV* and *King Lear* and one other play, John Donne's poems, Milton's *Paradise Lost* (selections) and some of the shorter poems. 9:20-10:40. 3 s.h. MR. FISHER

S124. SHAKESPEARE.—Ten plays after 1600. Occasional tests and one or two papers. 9:20-10:40. 3 s.h. MR. BOWMAN

S207. HISTORY OF THE ENGLISH LANGUAGE.—A survey of the language from Old to Present English, taking into consideration developments in phonology, morphology, syntax, and vocabulary. 7:40-9:00. 3 s.h. MR. FISHER

S233. AMERICAN LITERATURE, 1870-1900.—Selected works of the Chief authors of the period, including Whitman, Lanier, Mark Twain, James, Howells, Crane, and Emily Dickinson. The lectures will deal with the social background as well as the literary trends and the careers of the major authors. 9:20-10:40. 3 s.h. MR. GOHDES

S251. ENGLISH LITERATURE OF THE FIRST HALF OF THE 17TH CENTURY.—A survey of poetry and prose, with special emphasis on John Donne and the metaphysical poets. 11:00-12:20. 3 s.h. MR. WARD

S308X. SEMINAR IN AMERICAN LITERATURE.—For students writing theses in American Literature. Hours and credits to be arranged. MR. GOHDES

S350X. SEMINAR IN ENGLISH LITERATURE.—For students writing theses in English literature. Hours and credits to be arranged. MR. WARD

SECOND TERM

S2. ENGLISH COMPOSITION.—A continuation of course S1. 11:00-12:20. 3 s.h. MR. ANDERSON

S56. REPRESENTATIVE WRITERS.—Pope's *Poems* (selections), Fielding's *Joseph Andrews*, Keats's *Poems and Letters*, Arnold's *Selected Poetry and Prose*, Dickens's *Bleak House*, Yeats's *Collected Poems*, Shaw's *Saint Joan*, and a twentieth-century novel. 9:20-10:40. 3 s.h. MR. SANDERS

S166. AMERICAN FICTION.—A survey of the American novel and short story in the present century, centered around ten representative books. Lectures, discussions, and frequent quizzes. 9:20-10:40. 3 s.h. MR. BUDD

S221. ENGLISH LITERATURE OF THE EARLY NINETEENTH CENTURY.—The British Romantic poets and prose writers from Scott to the early Carlyle, with special attention to Wordsworth, Coleridge, and Keats. 7:40-9:00. 3 s.h. MR. SANDERS

S229. AMERICAN LITERATURE, 1800-1870.—The New England writers, with special emphasis on Emerson, Thoreau, and Hawthorne. 9:20-10:40. 3 s.h. MR. TURNER

S274. AMERICAN HUMOR.—The development of the native tradition in the Down-East humorists and the humorists of the Old Southwest. Extensive reading in Mark Twain and his contemporaries, and some attention to the continuation of the tradition after Mark Twain. 11:00-12:20. 3 s.h. MR. TURNER

FORESTRY

PROFESSOR CLARENCE F. KORSTIAN, DEAN OF THE SCHOOL OF FORESTRY AND DIRECTOR OF GRADUATE STUDIES—308 SOCIAL SCIENCE BUILDING (WEST CAMPUS)

Organized course work in the School of Forestry during the Summer Session is limited to plane surveying, forest surveying, tree identification, and forest mensuration which are required of all students entering upon two years of study in technical forestry leading to the degree of Master of Forestry (M.F.)

Qualified students may engage in thesis research in certain branches of forestry during the Summer Session with the approval of the instructor concerned and the Dean of the School of Forestry or of the Director of Graduate Studies in the case of work taken through the Graduate School.

C.E.S110. PLANE SURVEYING.—Use of instruments; transit, stadia, and compass surveying; determination of meridian by observation on Polaris; differential and profile leveling; setting grade stakes; calculation of bearings, latitudes, departures and areas; methods of plotting; survey and plot of portions of campus by stadia, and transit and tape; care and adjustment of instruments. Prerequisites: trigonometry; engineering drawing desirable. (Four weeks, eight hours a day.) Instruction begins on June 12 and continues through July 9. 4 s.h. MR. ARGES

S149. FOREST TREE IDENTIFICATION.—Field studies leading to the identification of trees and principal shrubs indigenous to the Piedmont and coastal plain forests of the Southeastern United States. (One week, eight hours a day.) July 10-July 16. 1 s.h. MR. HARRAR

S150. FOREST SURVEYING AND AERIAL PHOTO INTERPRETATION.—Application of plane surveying to forest problems; practice in making boundary, topographic and cover type surveys; details of land ownership and transfer, title search, and deed descriptions. The last two weeks will be spent in the study of the principles of aerial photogrammetry and photo interpretation, and may be taken separately for two hours of credit. Prerequisites: Civil Engineering S110, Plane Surveying; Forestry S149, Forest Tree Identification, or equivalents. (Four weeks, eight hours a day.) July 17-August 13. 4 s.h. MR. CHAIKEN

S151. FOREST MENSURATION.—Field studies in methods of measuring content and growth of trees and forest stands; practice in timber estimating, log scaling, use of mensurational instruments, and collection of basic data. (Four weeks, eight hours a day.) August 14-September 10. 4 s.h. MR. SCHUMACHER

S230. INSECT ENEMIES AND DISEASES OF SOUTHERN FORESTS.—Identification and control of injurious forest insects and diseases occurring in the South. Time to be arranged. Minimum enrollment 10. 1 s.h. or may be taken without credit. MESSRS. ANDERSON, JOHNSON

S357. RESEARCH IN FORESTRY.—Open to students whose research programs for the M.F. or D.F. degree have been approved by the Dean of the School of Forestry and the instructor responsible for directing the research and whose programs for the A.M. or Ph.D. degree have been approved by the Director of Graduate Studies and the instructor in charge. (Credits and schedule to be arranged.) June 12-August 24. 2 to 12 s.h. (Not more than one semester hour of credit per week for full time schedule or one semester hour each two weeks for half-time schedule.) (Consult courses 301-302 in Announcement of School of Forestry for letter designation of branches of forestry in which research is to be conducted.) STAFF

GEOLOGY

PROFESSOR E. WILLARD BERRY, CHAIRMAN—019 SCIENCE (EAST CAMPUS)

The class in Geology, Term I, will begin on June 18 and continue through July 16. The class in Geology, Term II, will begin on July 22 and continue through August 16. Students who wish to avoid paying a late registration fee must have their registration completed in advance of these dates.

FIRST TERM

S51. GENERAL GEOLOGY.—This course is designed to give a general view of the surface features of the earth, their origin, structure, and materials. Illustrative materials are studied in the laboratory. Excursions may be made to neighboring points where principles of the science are studied in the field. Lectures or recitations, 8:00-11:00 daily; laboratory 2:00-5:00, Monday through Thursday. June 18-July 16. 4 s.h.

MR. FURBISH

SECOND TERM

S52. GENERAL GEOLOGY.—This course is designed to give some knowledge of the chief events of the earth's history. Excursions may be made to suitable neighboring localities. Lectures or recitations, 8:00-11:00 daily; laboratory 2:00-5:00, Monday through Thursday. July 22-August 16. 4 s.h.

MR. FURBISH

GERMAN

PROFESSOR HERMAN SALINGER, CHAIRMAN—301B GRAY BUILDING (WEST CAMPUS)

The work in German S1, S2, S3 and S4 will be coordinated with listening and oral practice in the Language Laboratory which students in German classes will be privileged to attend. Attendance in the Laboratory is not compulsory but is very strongly advised by the Staff.

FIRST TERM

S1. ELEMENTARY GERMAN.—The fundamentals of grammar and pronunciation; vocabulary drill, translation, and dictation. Emphasis upon a sound reading knowledge and individual achievement. June 11 to June 29. 9:20-10:40 and 1:40-3:00. 3 s.h.

MR. WILSON

S2. ELEMENTARY GERMAN.—The equivalent of the second college semester of German; intensive reading of graded material; grammar and vocabulary drill; dictation and sight translation. July 1 to July 17. 9:20-10:40 and 1:40-3:00. 3 s.h.

MR. WILSON

S3. INTERMEDIATE GERMAN.—Grammar review and composition; reading of short stories, novels and poems. Prerequisite: German 1-2, or two units of high school German. June 11 to July 17. 9:20-10:40. 3 s.h.

MR. TARABA

S4. INTERMEDIATE GERMAN.—Continuation of German S3. Prerequisite: German 3 (or S3, which may be taken concurrently). June 11-July 17. 11:00-12:20. 3 s.h.

MR. TARABA

GREEK

ASSOCIATE PROFESSOR JAMES N. TRUESDALE, CHAIRMAN—123 ALLEN BUILDING (WEST CAMPUS)

FIRST TERM

S121. GREEK LITERATURE: HOMER.—*Iliad and Odyssey*. The purpose of this course is to give a general survey of the life and civilization of the Greeks especially to those who have never studied the language but wish to become acquainted with some of the choicest portions of the literature by the use of translations. The *Iliad* and the *Odyssey* are read in translation, and the excavations and discoveries at Troy and other cities of the Aegean age are discussed.

MESSRS. TRUESDALE, ROSE

SI21.1 7:40-9:00. 3 s.h.

SI21.2 7:40-9:00. 3 s.h.

SI22. GREEK LITERATURE: THE TRAGIC POETS.—The purpose of this course is similar to that of course SI21. Many of the extant plays of Aeschylus, Sophocles, and Euripides are studied in English translations. 9:20-10:40. 3 s.h.

MR. TRUESDALE

HEALTH AND PHYSICAL EDUCATION

E. M. CAMERON, DIRECTOR, TRINITY COLLEGE AND COLLEGE OF ENGINEERING—
109 GYMNASIUM (WEST CAMPUS)

FIRST TERM

PE S57. VOLLEYBALL-TENNIS.—Gymnasium. Hours to be arranged. 1 s.h.
(M) MR. COBB

PE SI32. SCHOOL HEALTH PROBLEMS.—A course designed (a) to familiarize the teacher with school health problems such as physical screening, communicable disease prevention and control, healthful school environment; (b) to present methods and materials for health teaching in elementary and secondary schools. 9:20-10:40. 3 s.h.

MR. AYCOCK

PE SI90. PROTECTIVE PRACTICES IN PHYSICAL EDUCATION.—Training and conditioning of athletic teams and the prevention, diagnosis, and treatment of athletic injuries. Gymnasium. 1:40-3:00. 3 s.h.

MR. MONTFORT

HISTORY

PROFESSOR E. MALCOLM CARROLL, CHAIRMAN—235 ALLEN BUILDING (WEST CAMPUS);
PROFESSOR ROBERT H. WOODY, DIRECTOR OF GRADUATE STUDIES—
234 ALLEN BUILDING (WEST CAMPUS)

For admission to candidacy for a Master's degree in History the student must present a total of eighteen semester hours of prior work in History, of which at least six must be in American History if he plans to take his major work in that field. Before enrolling for thesis supervision, candidates for the Master's degree are required to complete at least three semester hours of seminar work and are strongly urged to enroll for this work in the second term of their attendance in the Summer Session. (See courses numbered 300 or above.)

FIRST TERM

S51. HISTORICAL BACKGROUND OF THE WORLD TODAY 1500-1851.—The central fact of the expansion of Europe underlies the content of the course. The chief themes are: the contest between liberty and authority in the modern state, changing economic theory and organization, and the problems of peace and war among the states, including the Western infiltration of Asia, Latin America, and Africa, and the rise of the United States as a world power. 9:20-10:40. 3 s.h.

MR. YOUNG

S91. THE DEVELOPMENT OF AMERICAN DEMOCRACY TO 1865.—This course is a study of trends vital to an understanding of the United States today. The main theme is the development of American democracy. Problems of foreign policy, the growth of capitalism, political practices, social behavior, and conflicting ideals are considered in relation to this main theme. 7:40-9:00. 3 s.h.

MR. DECONDE

SI22. AMERICAN DIPLOMACY IN THE TWENTIETH CENTURY.—This course deals with ideas and problems in American foreign policy and with the role of the United States in world affairs. It begins with the Spanish American War and ends with the foreign policy problems of the Eisenhower administration. 11:00-12:20. 3 s.h.

MR. DECONDE

S229. RECENT INTERPRETATIONS OF MODERN EUROPEAN HISTORY.

—A course designed to develop the ability to appraise critical historical issues through the study and discussion of recent interpretations of key historical problems in Modern European History. The topics selected will vary with the needs of the class, but will include such classic controversies as the nature of the Industrial Revolution, the origins of World War I, and the Russian Revolution. 9:20-10:40. 3 s.h. MR. COLTON

S255. THE EMERGENCE OF THE NEW SOUTH, 1865 TO THE PRESENT.

The course deals with such subjects as the impact of Reconstruction; industrialization and immigration; the agrarian revolt of the 1890's; the changing status of the Negro; the South's role in two World Wars and in the reform movements headed by Theodore Roosevelt, Woodrow Wilson and Franklin D. Roosevelt. Wherever possible, examples will be drawn from the South Atlantic states. 7:40-9:00. 3 s.h. MR. DURDEN

S301. SEMINAR IN HISTORICAL RESEARCH.—1:40-3:00 or at an hour to be arranged. 3 s.h. MR. WATSON

SECOND TERM**S52. HISTORICAL BACKGROUND OF THE WORLD TODAY 1851-1956.**

A continuation of History S51. 9:20-10:40. 3 s.h. MR. FERGUSON

S92. THE DEVELOPMENT OF AMERICAN DEMOCRACY, 1865 TO THE PRESENT.—The emphasis is on the emergence of contemporary problems. 7:40-9:00. 3 s.h. MR. STEVENS

S209. POLITICAL INSTITUTIONS OF THE UNITED STATES 1760-1848.—The evolution of the principal institutions of the government of the United States, related to their setting in a changing society. Topics include the colonial heritage; the basic problems in forming the Constitution and major controversies surrounding its interpretation; the origins of national political parties. 9:20-10:40. 3 s.h. MR. STEVENS

S302. SEMINAR IN HISTORICAL RESEARCH.—1:40-3:00 or at an hour to be arranged. 3 s.h. MR. FERGUSON

LATIN AND ROMAN STUDIES

PROFESSOR ROBERT S. ROGERS, CHAIRMAN—204 CARR BUILDING (EAST CAMPUS)

FIRST TERM

S111. ROMAN LITERATURE IN ENGLISH TRANSLATION.—Selected readings of Latin literature in English translation with emphasis on the drama, lyric poetry, and the varied contributions of Cicero to literature. 9:20-10:40. 3 s.h. MR. ROSE

MATHEMATICS

PROFESSOR J. J. GERGEN, CHAIRMAN—134 PHYSICS BUILDING (WEST CAMPUS); PROFESSOR J. H. ROBERTS, DIRECTOR OF GRADUATE STUDIES—230 PHYSICS BUILDING (WEST CAMPUS)

Graduate students are invited to consult with the Director of Graduate Studies concerning their programs.

FIRST TERM

S5. COLLEGE ALGEBRA.—Advanced topics in quadratic equations, systems involving quadratics, variation, binomial theorem, progressions, inequalities, theory of equations, determinants, partial fractions, probability. This course and Mathematics S6 may be taken concurrently. Prerequisite: Mathematics I, or one and one-half units in algebra and one unit in geometry. 7:40-9:00 3 s.h. MR. CARLITZ

S6. PLANE TRIGONOMETRY.—Logarithms, right and oblique triangles, radian measure, graphs of trigonometric functions, inverse trigonometric functions, trigonometric identities and equations. Prerequisite: Must be preceded or accompanied by Mathematics 5. 9:20-10:40. 3 s.h. MR. THOMAS

S224. MATHEMATICAL STATISTICS.—Representation of data, averages, measures of dispersion, comparison of distributions, correlation, probability functions, normal curve and generalizations, sampling. This is a basic first course in statistics. Prerequisite: Calculus. 9:20-10:40. 3 s.h. MR. CARLITZ

S284. VECTOR ANALYSIS.—Vectors in three-dimensional Euclidean space with applications to physics; introduction to matrix algebra and tensor analysis. Prerequisite: integral calculus. 7:40-9:00. 3 s.h. MR. THOMAS

S389X. THESIS SEMINAR.—Supervision of individual theses in algebra, analysis and geometry. Students should consult with the Director of Graduate Studies before registering. Thesis credit only. Hours to be arranged.

MESSRS. CARLITZ AND THOMAS

SECOND TERM

S50. PLANE ANALYTIC GEOMETRY.—Rectangular and polar coordinates, loci, straight lines, conic sections. This course and Mathematics S51 may be taken concurrently. Prerequisites: Mathematics 5 and 6. 7:40-9:00 3 s.h. MR. ELLIOTT

S51. CALCULUS I.—Differentiation of elementary functions, curve tracing, maxima and minima, motion, curvature, indeterminate forms. Prerequisite: Must be preceded or accompanied by Mathematics 50. 9:20-10:40. 3 s.h. MR. ELLIOTT

PHILOSOPHY

PROFESSOR CHARLES A. BAYLIS, CHAIRMAN—212 WEST DUKE BUILDING (EAST CAMPUS);

PROFESSOR BERNARD PEACH, DIRECTOR OF GRADUATE STUDIES—

212 WEST DUKE BUILDING (EAST CAMPUS)

FIRST TERM

S48. LOGIC.—A study of the conditions of effective thinking and clear communication, and of typical sources of fallacies. Examination of the basic principles of deductive reasoning (making explicit the implications of statements) and of inductive reasoning (the formulation and testing of hypotheses on the basis of experience and experiment). Emphasis on practical illustrations and applications. 11:00-12:20. 3 s.h. MR. WELSH

S91. INTRODUCTION TO PHILOSOPHY.—A systematic and historical examination of the major problems of knowledge, morals, and metaphysics. 9:20-10:40. 3 s.h. MR. WELSH

SECOND TERM

S91. INTRODUCTION TO PHILOSOPHY.—A systematic and historical examination of the major problems of knowledge, morals, and metaphysics. 11:00-12:20. 3 s.h. MR. BUCK

S93. HISTORY OF PHILOSOPHY: ANCIENT AND MEDIEVAL.—A study of the major philosophers of the period with special reference to the continuity of their thought. 9:20-10:40. 3 s.h. MR. BUCK

PHYSICS

PROFESSOR WALTER M. NIELSEN, CHAIRMAN AND DIRECTOR OF GRADUATE STUDIES—

119 PHYSICS BUILDING (WEST CAMPUS)

Classes in Physics S41, Term I, will begin on June 18 and continue through July 16. Classes in Physics S42, Term II, will begin on July 22 and continue through

August 16. Students who wish to avoid paying a late registration fee must have their registration completed in advance of these dates.

FIRST TERM

S41. GENERAL PHYSICS.—This course treats the basic principles of general physics in a more quantitative manner than Physics 1-2. It meets in a thorough way the physics requirement for entrance into the study of either medicine or engineering, and is well suited for the general science student. This course is not open for credit for students who have completed Physics 1-2. Lecture and recitation daily, 8:30-9:50 and 10:10-11:30; laboratory four days per week, 1:00-4:00. Prerequisites: Mathematics 5-6 or equivalent. 4 s.h. MR. CARPENTER

S353X. THESIS SEMINAR.—Students who are properly qualified may carry on research work under direction. Credits and hours to be arranged. STAFF

SECOND TERM

S42. GENERAL PHYSICS.—A continuation of Physics S41. Prerequisite: Physics S41. Lecture and recitation daily, 8:30-9:50 and 10:10-11:30; laboratory four days per week, 1:00-4:00. 4 s.h. MR. CARPENTER

POLITICAL SCIENCE

PROFESSOR ROBERT S. RANKIN, CHAIRMAN—308 LIBRARY (WEST CAMPUS); PROFESSOR R. R. WILSON, DIRECTOR OF GRADUATE STUDIES—405 NEW LIBRARY TOWER (WEST CAMPUS)

FIRST TERM

S61. THE AMERICAN POLITICAL SYSTEM.—An analysis of the principles and institutions of the national government of the United States. 11:00-12:20. 3 s.h. MR. SIMPSON

S125. AMERICAN POLITICAL PARTIES AND PRACTICAL POLITICS.—A study of the historical development, organization, and methods of political parties in the United States. 9:20-10:40. 3 s.h. MR. SIMPSON

S231. AMERICAN POLITICAL THEORY.—An analysis of the main currents in American political thought from colonial beginnings to the present day, with emphasis upon the development of liberalism in America. 7:40-9:00. 3 s.h. MR. HALLOWELL

SECOND TERM

S62. COMPARATIVE POLITICAL SYSTEMS.—An analysis of the principles and institutions of selected foreign governments, as compared with those of the United States. 11:00-12:20. 3 s.h. MR. LEACH

S123. INTRODUCTION TO POLITICAL PHILOSOPHY.—A course devoted to the reading and discussion of selected political classics including Plato's *Republic*, Aristotle's *Ethics* and *Politics* and other works as time permits. 9:20-10:40. 3 s.h. MR. LEACH

S232. JAPANESE CIVILIZATION.—Analysis of Japanese culture with reference to social and political institutions. Buddhist, Confucian, and Shinto bases of Japanese thought are examined. 9:20-10:40. 3 s.h. MR. BRAIBANTI

S311. SEMINAR IN FAR EASTERN POLITICS.—Open to students who have completed course 211 or its equivalent. 1:40-3:00. 3 s.h. MR. BRAIBANTI

PSYCHOLOGY

PROFESSOR ELIOT H. RODNICK, CHAIRMAN—106 BIVINS BUILDING (EAST CAMPUS)
PROFESSOR KARL ZENER, DIRECTOR OF GRADUATE STUDIES—205
PSYCHOLOGY LABORATORY BUILDING (EAST CAMPUS)

Details concerning the program of studies in Psychology may be obtained from the Director of Graduate Studies in Psychology.

FIRST TERM

S91. **INTRODUCTORY PSYCHOLOGY.**—An introduction to the facts, principles, and problems of normal adult psychology through a study of psychological methods as applied to motivation, emotions, perception, sensation, thinking, memory, learning, individual differences, and personality. 9:20-10:40. 3 s.h. MR. KIMBLE

S211. **THE PROBLEM CHILD** (Also Education S211).—Study of problem behavior and adjustment in children with emphasis on the causes and treatment of conduct and neurotic disorders of the maladjusted child. Particular attention will be paid to mental hygiene principles in the handling of problem children in school and home. 11:00-12:20. 3 s.h. MR. BORSTELMANN

S232. **PERSONALITY AND PHYSICAL HANDICAP.**—Survey of the psychological factors underlying adjustment to physical disabilities, with particular stress upon personality, emotional and social attributes. Selected case studies will be used to illustrate the integration of such factors in adjusting to home, school, and hospital settings. These cases will stress the psychological factors which hinder learning and retraining procedures. Discussion will center about psychological techniques to produce more effective progress in rehabilitation. 7:40-9:00 3 s.h. MR. SPIELBERGER

S303. **RESEARCH.**—Students who are properly qualified may carry on research work under direction. Hours to be arranged. 3 s.h. STAFF

SECOND TERM

S304. **RESEARCH.**—Students who are properly qualified may carry on research work under direction. Hours to be arranged. 3 s.h. STAFF

RELIGION

PROFESSOR JAMES CANNON, DEAN OF THE DIVINITY SCHOOL—110 DIVINITY SCHOOL (WEST CAMPUS); PROFESSOR H. E. MYERS, CHAIRMAN OF THE DEPARTMENT OF RELIGION—

108 GRAY (WEST CAMPUS); ASSOCIATE PROFESSOR JAMES H. PHILLIPS, DIRECTOR

OF UNDERGRADUATE STUDIES IN RELIGION—106 GRAY (WEST CAMPUS);

PROFESSOR H. SHELTON SMITH, DIRECTOR OF GRADUATE STUDIES

IN RELIGION—308 DIVINITY SCHOOL (WEST CAMPUS)

THE DEPARTMENT OF RELIGION

FIRST TERM

S51. **THE ENGLISH BIBLE.**—Survey of the contents of the Old Testament books in the light of their origin in the history and religion of the Hebrew people. 7:40-9:00. 3 s.h. MR. PHILLIPS

S52. **THE ENGLISH BIBLE.**—A study of the personalities and literature of the New Testament against their Jewish, Hellenistic and Roman background. 9:20-10:40. 3 s.h. MR. MANSCHRECK

S101. **THE SOCIAL TEACHINGS OF THE PROPHETS AND JESUS.**—A study of the social teachings of the Old Testament prophets and of the social ideas of Jesus as they appear in the four gospels. Not open for credit to students who take Religion 103 or 114. 9:20-10:40. 3 s.h. MR. PHILLIPS

S135. **CHRISTIAN BIOGRAPHY.**—A study of Christianity in the lives and writings of a few key persons, for example, Augustine, Francis of Assisi, Luther, and Wesley. The aim of the course is to present the central stream of the development of Christian thought and practice through the study of men who were significant in their own times and whose ideas are relevant to the understanding of current Christianity. Prerequisite: 3 s.h. of Bible. 11:00-12:20. 3 s.h. MR. MANSCHRECK

SECOND TERM

S51. **THE ENGLISH BIBLE.**—For description see Term I. 7:40-9:00. 3 s.h. MR. PRICE

S52. **THE ENGLISH BIBLE.**—For description see Term I. 9:20-10:40. 3 s.h. MR. OSBORN

S91. AN INTRODUCTION TO CHRISTIAN ETHICS.—A study of the theistic interpretation of man's moral experience, based upon the world-view of the Bible, as contrasted with other classical and contemporary moral philosophies. In the survey of the ethical religion of the Bible special attention is given to the Hebrew prophets, to Jesus and the Apostle Paul. 11:00-12:20. 3 s.h. MR. OSBORN

S114. THE LIFE AND TEACHINGS OF JESUS.—This course considers the period in which Jesus lived, the record of his life, and the meaning of his teachings as recorded in the Synoptic Gospels. Students may not receive credit for 114 and 101; or 114 and 116. 9:20-10:40. 3 s.h. MR. PRICE

THE DIVINITY SCHOOL

Class enrollments will be controlled as occasion may arise so as to secure a fairly even distribution among the courses offered in each term.

FIRST TERM

S102 (DS). CHRISTIAN FAITH AND THE PROBLEM OF EVIL.—Analysis of the questions raised for faith by tragedy, suffering and/or evil, examination of answers proposed in Christian and philosophical literature. (For advanced students.) 9:20-10:40. 3 s.h. MR. FOSTER

S105 (DS). LIFE OF PAUL.—A study of Paul's life on the basis of Acts and the letters of Paul, emphasizing the permanent values in Paul's work and his contribution to the world. 7:40-9:00. 3 s.h. MR. MYERS

S190 (DS). THE CHRISTIAN CRITIQUE OF COMMUNISM.—Analysis of and alternative to the dynamic secular ideology from a religious standpoint. 11:00-12:20. 3 s.h. MR. LACY

S199 (DS). THOUGHT IN AMERICAN CHRISTIANITY.—A survey of Christian social thought since 1830. 7:40-9:00. 3 s.h. MR. SMITH

SECOND TERM

S167 (DS). THEOLOGY AND THE LAY MIND.—Formulation and communication of the Christian faith, for the mind of today. (For advanced students.) 7:40-9:00. 3 s.h. MR. RICHEY

S170 (DS). SEMINAR IN PASTORAL CARE.—For students preparing for full-time pastoral ministry, hospital chaplaincy, industrial chaplaincy, ministry to older people, or work with young people. Practicum. 1:40-3:00. 3 s.h. MR. DICKS

S181 (DS). PRACTICAL PROBLEMS IN PREACHING.—Analysis of selected sermons and discussion of problems facing the preacher in the pulpit. 11:00-12:20. 3 s.h. MR. CARLTON

S197 (DS). CULTURAL HISTORY OF PALESTINE.—A study of significant contributions to civilization made in ancient, medieval, and modern Palestine with special reference to the three religions, Judaism, Christianity, and Islam. 9:20-10:40. 3 s.h. MR. STINESPRING

ROMANCE LANGUAGES

PROFESSOR E. R. JORDAN, CHAIRMAN—214 CARR BUILDING (EAST CAMPUS); PROFESSOR GIFFORD DAVIS, ACTING DIRECTOR OF GRADUATE STUDIES—201 CARR BUILDING (EAST CAMPUS)

The Audio Laboratory will be available to French and Spanish students in courses 1-2, 3-4 and RL218 for supplementary exercises in the spoken language. All auditions will be synchronized with the daily textbook assignments.

FRENCH

FIRST TERM

S1. ELEMENTARY FRENCH.—Introduction to simple conversational patterns, elements of grammar, graded readings. 7:40-9:00. 3 s.h. MR. WALKER

S3. INTERMEDIATE FRENCH.—The progressive development of skills in speaking, understanding and reading. Prerequisite: French 1-2 or two years of high school French. 11:00-12:20. 3 s.h. MR. HARDEE

S51. INTRODUCTION TO FRENCH LITERATURE.—Development of skill in rapid reading correlated with discussion in French of content and ideas. 7:40-9:00. 3 s.h. MR. DOW

S52. INTRODUCTION TO FRENCH LITERATURE.—Continuation of French S51, with main emphasis on authors of the nineteenth and twentieth centuries. 9:20-10:40. 3 s.h. MR. AUBERY

RL S218. THE TEACHING OF ROMANCE LANGUAGES.—Evaluation of objectives and methods; a study of the practical problems involved in teaching these languages on the elementary, secondary and college level; analysis of textbooks, special foreign language programs, audio-visual aids; critical examination of modern techniques in written and oral testing. 11:00-12:20. 3 s.h. MR. DOW

SECOND TERM

S2. ELEMENTARY FRENCH.—Continuation of S1. 7:40-9:00. 3 s.h.

MR. GRANT

S4. INTERMEDIATE FRENCH.—Continuation of S3 with more extensive reading. 11:00-12:20. 3 s.h. MR. GRANT

SPANISH

FIRST TERM

S1. ELEMENTARY SPANISH.—Introduction to simple conversational patterns, elements of grammar, graded readings. 11:00-12:20. 3 s.h. MR. MILLER

S3. INTERMEDIATE SPANISH.—The progressive development of skills in speaking, understanding and reading. Prerequisite: Spanish 1-2 or two years of high school Spanish. 7:40-9:00. 3 s.h. MR. BLANCHARD

S65. INTRODUCTION TO SPANISH LITERATURE.—Readings from representative Spanish authors. Development of skill in rapid reading correlated with discussion in Spanish of content and ideas. 11:00-12:20. 3 s.h. MR. CASTELLANO

S68. INTRODUCTION TO SPANISH-AMERICAN LITERATURE.—Readings from representative Spanish-American authors. Development of skill in rapid reading correlated with discussion in Spanish of content and ideas. 7:40-9:00. 3 s.h.

MR. MILLER

RL S218. THE TEACHING OF ROMANCE LANGUAGES.—See statement above.

S264. MODERN AND CONTEMPORARY SPANISH THEATER.—A brief review of modern and contemporary Spanish theater from the period of Romanticism. Lectures, reading, and discussion of the most representative works of Benavente, Martínez Sierra, los Hermanos Quintero, etc. 9:20-10:40. 3 s.h. MR. CASTELLANO

SECOND TERM

S2. ELEMENTARY SPANISH.—Continuation of S1. 11:00-12:20. 3 s.h.

MR. FLINT

S4. INTERMEDIATE SPANISH.—Continuation of S3 with more extensive reading. 7:40-9:00. 3 s.h. MR. FLINT

SOCIOLOGY

PROFESSOR HOWARD E. JENSEN, CHAIRMAN—215E SOCIAL SCIENCE BUILDING (WEST CAMPUS); PROFESSOR HORNELL HART, DIRECTOR OF GRADUATE STUDIES—215D SOCIAL SCIENCE BUILDING (WEST CAMPUS)

The Department of Sociology offers graduate work leading to the A.M. and Ph.D. degrees. Before undertaking advanced work in this department, a student must

have completed a minimum of twelve semester hours of approved preliminary courses in the field, and twelve additional semester hours in the field or in related work. A student who is deficient in the minimum required work will be asked to take additional undergraduate courses agreed upon in conference with the Director of Graduate Studies.

Candidates for advanced degrees in Sociology usually take minor work in Psychology, Economics, Political Science, Education, History, or Religion. Detailed requirements for the minor work, and for majors in other departments who wish to present Sociology as minor work, may be obtained from the Director of Graduate Studies.

FIRST TERM

S91-92. GENERAL SOCIOLOGY.—An introduction to the scientific study of social life, its origin, evolution, and organization as illustrated by the study of a number of concrete social problems. 9:20-10:40 and 12:40-2:00. 6 s.h.

MR. McNURLEN

(Course 91-92, or 101, or 93, or 94 is prerequisite to all other courses in the department. Course 91-92, or 101 is required of all students majoring in the department.)

S249. CHILD WELFARE.—A study of hereditary and environmental factors in personality development; infant conservation; welfare responsibilities of the school, emphasizing the physical and mental well-being of the child, play, and compulsory and industrial education; child labor, diagnosis and treatment of delinquency; care of the dependent and neglected child; child-caring agencies, public and private; and a community program of child welfare. 9:20-10:40. 3 s.h.

MR. JENSEN

S276. CRIME AND DELINQUENCY.—A study of the original tendencies of man and the problem of socializing these tendencies; the relations of physical and mental defectiveness and untoward influence in the home and neighborhood to crime; the development of criminological theory and procedure, emphasizing penal and reform methods, and especially modern methods of social treatment and prevention of crime. 11:00-12:20. 3 s.h.

MR. JENSEN

SECOND TERM

S246. PUBLIC OPINION AND PROPAGANDA.—Nature and development of public opinion; relative to attitudes, biases, stereotypes and controversial issues; role of leaders, pressure groups and minority groups; use of radio, press, motion picture and graphic arts; propaganda and censorship; measurements of public opinion. 9:20-10:40. 3 s.h.

MR. SCHETTLER

S274. CONTEMPORARY SOCIAL PROBLEMS.—A study of the causes, extent, significance, and constructive treatment of the principal forms of pathology in modern society; natural disasters, poverty, physical defectiveness, malnutrition, mental deficiency, mental disease, undirected leisure activities and unstandardized commercial recreation, alcoholism, prostitution, vagrancy, and delinquency. Not open to students who have had Sociology 271. 11:00-12:20. 3 s.h.

MR. SCHETTLER

ZOOLOGY

PROFESSOR KARL M. WILBUR, CHAIRMAN—224 BIOLOGY BUILDING (WEST CAMPUS);

PROFESSOR KURT SCHMIDT-NIELSEN, DIRECTOR OF GRADUATE STUDIES—

337 BIOLOGY BUILDING (WEST CAMPUS)

All classes in Zoology offered on Duke Campus in Term I will begin on June 18 and continue through July 16. All classes in Zoology offered at Duke Marine Laboratory at Beaufort, North Carolina, in Term I will begin on June 12 and continue through July 17. All classes in Zoology offered on Duke Campus in Term II will begin on July 22 and continue through August 16. All classes in Zoology offered at Duke Marine Laboratory, Beaufort, North Carolina, in Term II will begin on July 20 and continue through August 24. Students who wish to avoid paying a late registration fee must have their registration completed in advance of these dates.

For admission to candidacy for a Master's degree in Zoology, a student should have completed an undergraduate major in Zoology (courses in General Science and Botany are not counted as a part of a Zoology major). This normally amounts to about twenty-four semester hours, which should be distributed among various fields of Zoology, and must include Vertebrate Zoology or Comparative Anatomy, Physiology, and Embryology, passed with creditable grades. A candidate should also have completed at least one year of Chemistry. Work for the degree will require eighteen hours in advanced courses in Zoology, and six hours in another department for a minor, in addition to a thesis. Before registration for a degree, students should confer with the Director of Graduate Studies for the Department. Students not candidates for a degree may take courses offered if they have necessary prerequisites but may not count them toward a degree until an undergraduate major has been completed.

FIRST TERM (Duke Campus)

S1. ANIMAL BIOLOGY.—The principles of biology as applied to animals. Lecture, recitation and laboratory daily, 8:00-12:00, 2:00-4:00. June 18-July 16. 4 s.h.
MR. WARD

S353. RESEARCH. Hours to be arranged. 2-6 s.h.

STAFF

FIRST TERM (Duke Marine Laboratory, Beaufort, North Carolina)

S203. MARINE ECOLOGY.—A study of marine animals in relation to environment. Consideration of environmental factors, succession, rhythms, communities, intraspecific and interspecific relations, productivity, conservation, problems, etc., concerned with animal life in the ocean. Lectures, reviews, conferences, field and laboratory work. 6 s.h.
MR. GRAY

S353. RESEARCH. Hours to be arranged. 2-6 s.h.

STAFF

SECOND TERM (Duke Campus)

S2. GENERAL ZOOLOGY.—A brief survey of the animal kingdom. Lecture, recitation and laboratory daily, 8:00-12:00, 2:00-4:00. July 22-August 16. 4 s.h.
MR. BAILEY

S353. RESEARCH. Hours to be arranged. 2-6 s.h.

STAFF

SECOND TERM (Duke Marine Laboratory, Beaufort, North Carolina)

S211. QUANTITATIVE BIOLOGY.—The analysis and interpretation of measurement data obtained from biological populations including sampling techniques, estimation, the applications of analysis of variance and regression, and computational procedures. Statistical concepts in biology-binomial and Poisson type populations. 6 s.h.
MR. MONROE

S274. MARINE INVERTEBRATE ZOOLOGY.—A study of invertebrate animals that occur in the Beaufort region. A number of field trips will be made to a variety of habitats to study, collect, and classify animals in their natural environment. The structure and habits of living invertebrates as well as their behavior under certain experimental conditions will be studied in the laboratory. 6 s.h.
MR. BOOKHOUT

S353. RESEARCH. Hours to be arranged. 2-6 s.h.

STAFF

Alumni Organizations



GENERAL ALUMNI ASSOCIATION: The Alumni Association of Duke University is composed of the former students of Duke University and its predecessor, Trinity College. The Association gives its annual dinner at Commencement, at which time the annual business meeting of the Association is held.

GENERAL ALUMNAE ASSOCIATION: The Alumnae Association of Duke University is composed of the women graduates and former students of Duke University and its predecessor, Trinity College. The Association joins with the Alumni Association in the annual dinner at Commencement. The annual business meeting is held during Alumnae Week End.

DUKE UNIVERSITY NATIONAL COUNCIL: The Duke University National Council is a working body for the alumni interests and maintains a constant supervision of alumni activities. It devotes its activities and efforts to advancing the welfare of Duke University by all appropriate means. Two meetings are held each year, one at Commencement and the other in the fall. The Council is composed of representatives from the various classes, local associations, students, faculty, parents, representatives at large, honorary members, officers of the General Alumni and Alumnae Associations, and representatives from the alumni and alumnae organizations of the professional schools.

ALUMNAE COUNCIL: The Alumnae Council was established by the General Alumnae Association in 1925. As the working organization of the group which established it, the Council endeavors to bind more closely the alumnae and the University and to advance the interests and aims of Duke University.

THE ALUMNI OFFICE: The General Alumni Office was organized to promote the work of the local alumni and alumnae associations and to co-ordinate the various activities of the General Alumni and Alumnae Associations and the Duke University National Council and Alumnae Council. Eighty county and local alumni associations have been formed in North Carolina and other states.

THE ALUMNI REGISTER OF DUKE UNIVERSITY: *The Alumni Register* of Duke University is a magazine published ten months of the year by the Alumni Association in the interest of the alumni and the University. It aims to keep the alumni in touch with one another and with the University.

THE ALUMNI NEWS: *The Duke University Alumni News* is sent to all alumni six times during the year.

Bureau of Public Information



The Bureau of Public Information is the official news agency of the University in the Department of Public Relations, and all University news emanates from this office. The Bureau maintains the University's relationship with the press and radio, and interprets the University—its faculty, its research and achievement—to the public via these media.

The Bureau also maintains individual biographical files on all faculty members and students, as well as files on all University departments and activities. Its files of clippings form a rich source of historical information of the Institution's life. In addition, the Bureau is a source of information for the many inquiries about Duke University which are received daily from all sections of the nation and from abroad.

Gifts and Bequests



DUKE University derives its principal support from endowment funds and from miscellaneous gifts and grants. Permanently invested capital funds enable the University to offer to students academic and professional training at a fraction of its actual cost. The effectiveness of the University is determined to a large extent by its financial resources.

Gifts and bequests devoted to the improvement of the work of the University will be received and administered by the trustees in accordance with the desires of the donor.

GIFTS. Any kind of property, real or personal, may be the subject of a gift and only such form as is required to pass title is necessary. If the gift consists of real property, the title will be passed by deed; if it consists of cash or unregistered bonds, the gift is consummated by delivery of the property; or if stocks, by delivery of properly endorsed stock certificates. Unless restricted, the use of gifts is at the

discretion of the Board of Trustees. Usually the proceeds, conservatively invested, are added to the permanent endowment of the University. The donor may, however, restrict the use of any gift and designate definitely the objects for which it shall be used. In such cases, the transfer of property would be accomplished by a letter or other documents describing in detail the objects for which the proceeds of the gift are to be used and when accepted by the University the term or conditions set out therein become binding upon it.

BEQUESTS. Bequests may be made to the University by an appropriate clause inserted in a will by codicil to a will already drawn. The following forms will serve as appropriate clauses for wills or codicils:

GENERAL

I give (devise; if real property) and bequeath to Duke University, a corporation existing under the laws of the State of North Carolina and located in the City and County of Durham, State of North Carolina, and its successors forever, the sum of.....dollars (or otherwise describe the gift) for the general purposes and uses of the University at the discretion of the Board of Trustees.

SPECIFIC

I give (devise; if real property) and bequeath to Duke University, a corporation existing under the laws of the State of North Carolina and located in the City and County of Durham, State of North Carolina, or its successors forever, the sum of.....dollars (or otherwise describe gift) and direct that the income therefrom shall be used for the following purposes, viz. (here describe the use desired).

CODICIL

Having hereinbefore made my last Will and Testament dated....., and being of sound mind, I hereby make, publish, and declare the following codicil thereto; (here insert clause in same form as if it had been included in body of Will). Except as hereinbefore change, I hereby ratify, confirm and republish my said last Will and Testament.

Degrees and Honors

The following degrees were awarded June 3, 1957:

A.B. DEGREE

Elizabeth Lumsden Adams
Kenneth L. Albrecht
Henrian Sylvester Allegood
Weldon Dean Allison
Nora Grant Alston
Phebe Lucille Anderson
Leilani Russell Andrews
Jerry Quentin Armstrong
Frederick Charles Arnold
Freeman Lowell Ashworth
George Branham Atkinson, Jr.
Virginia Storr Atkinson
Patricia Gregg Ayers
Raymond Wahid Azar, Jr.
Stuart Richard Backer
William Andrew Bader
William Fleming Bailey, Jr.
Willard F. Baker
Hobart Everett Baldwin, Jr.
Richard Foster Barber
Harriette Ann Barham
Robert Barry Barker
David Sanford Barkley
Phyllis Mary Bartlett
Ernest Brevard Bass, Jr.
Linda Ann Batchelor
Ann Salisbury Bates
Erwin Henry Baumer
Fredrick Jerome Beasley
William Dick Beaty
Joan Elizabeth Bedell
Willard Hugh Beeson
Barbara Bell
Edward Lewis Berry
Virginia Claire Best
Richard Louis Betts
Barbara Jane Bickhart
William Henry Biggers
Janice Ruby Bishop
Mary Emily Satterfield Blackburn
Kenneth Charles Bolte
Tricia Ann Booth
Brian James Bosch
Nancy Lucille Bowles
Rosa Coke Boyle
Sherrod Lee Braxton, Jr.
Virginia Lee Brewer
Susan Lou Bridgwater
Sandra Lou Shriver Brockwell
Eugene H. Brooks, Jr.
Marilyn Nancy Brower
Tallulah Ann Brown
Norwell Bruce Browne, Jr.
John Robert Brubaker
Emma Evelyn Bruton
Betty Ruth Bryan
Jo Ann Bryant
William Gray Bryant, Jr.
John West Buchanan
Nancy Carolyn Burns
Bret Owen Burquest
Robert George Butts
Carol Byrd
Edward Blake Byrne
Margelyn Patricia Carrick
Noël Carroll
Mary Elizabeth Carter
Thomas Lisson Cartwright

Lucinda Cason
Harry Richard Casterlin
Fred Weston Caswell
Margaret Anne Cathey
John Whitson Cell
John Hynson Challenger
Barbara Beavers Chapman
Edwin Thomas Chapman, Jr.
Janet Montez Chappelle
Marion Requa Chesson
Oscar Charlie Chewing, Jr.
Kathryn Elizabeth Clark
Dorothy Elizabeth Cobb
Herbert Dean Cobble
Mary Louise Cofer
Betsy White Coker
Thomas Grosvenor Colmey
Elizabeth Ann Colville
Howard Lawrence Copeland
Anne Hodges Corpening
John Christopher Correll
Cornelius B. Courtney, Jr.
Alice LaRue Cowles
Carol Meyer Cox
Robert Wayne Crabtree
Arthur Bruce Craddock
William Guild Crockett
Llewellyn Cumming
Jasper Richard Cummings
Larry Jean Davis
L. Wilson Davis, Jr.
Ruth Elma Davis
Shirley Anne Davis
Janet Marion Dean
Jarvis Gibson Dean, Jr.
William Ronald Deans
David John Deas
Mahlon Wingate DeLoatch, Jr.
Charles William Dillie, Jr.
Anne Dixon
Robert Tillotson Dixon
Addie Jane Douglas
Mary Ann Dowling
Diana Mainsel Downey
Donald Dwight Duffey
Peter B. Dunning
Joan Earle
James Willard Eaton, Jr.
Jean Byers Edgar
Shirley Sue Edgerton
Theodore Richard Ellis, III
Anne Rankin Ellison
Susan Ann Erwin
James Garnet Bayne Falk
Walter Robert Fallaw, Jr.
Gary Clayton Farmer
Harleigh Franklin Fatzinger
Stanley E. Faye
Dorothy Ann Felson
Benjamin F. Few, Jr.
Morton Peter Fischer
Edgar Beauregarde Fisher, Jr.
Leon Henry Fisher
Barbara Ramseur Foard
Curtis Holmes Foreman
Ralph Patterson Forsyth
Edmund Robert Fraser
Mary Ann French

Joel L. Friedman
 James Michael Fulcomer
 William Wrenn Gantt
 Ledyard Dickinson Gardner, Jr.
 Stephen Crum Gardner
 Janice Carolyn Garrard
 Marjorie Anderson Gay
 David L. Genter
 Richard Travers German
 Margaret Baxter Gibson
 James Harman Gilbert, Jr.
 Robert Stephen Ginsburg
 Herman H. Glass
 Joe D. Glass, Jr.
 Ronald Jay Glaubinger
 Doris Elizabeth Glenn
 Theodore William Glynn, III
 Eugene Elmer Goddard, Jr.
 John Cobb Goodall, Jr.
 Patricia Orr Gordon
 Anne Joyner Grady
 Marilyn Huxley Green
 Arnold Elliot Greenberg
 Judith Greene
 Sandra Ann Greene
 Joe Grills
 Jon Keith Grimson
 Priscilla Ann Grissett
 Harvey S. Halberstadter
 Eleanor Hoag Hall
 Terry Lingle Hammill
 George C. Harden, Jr.
 Eva Hackney Hargrave
 Alfred Merle Harrington
 Eugene Starke Harris
 Martha Rae Harris
 William Edwin Harris
 William Thomas Harrison
 Julia Drane Hart
 Robert L. Hart
 Ralph Eugene Hatchell, Jr.
 Martin Armstead Hatcher, Jr.
 Carl Joseph Haterius
 Brack G. Hattler, Jr.
 Harry S. Havens
 Alix Madge Hawkins
 David M. Hay
 Sally Lee Hazen
 Frederick William Hearn
 Alan Lewis Heil, Jr.
 Sidney Isabel Heizer
 Charles McKinnon Hensey
 Ursula Sieger Herr
 James Manson Hicks
 Marilyn Jane Hildreth
 August William Hock
 Sarah Jane Hodges
 Robert Arthur Hohner
 William Langston Holland
 Nancy Ayscue Holler
 Barbara Maria Holtgren
 David Weldon House
 John Theodore Houston
 Margaret Ann Howlett
 Jerry Garland Hubbard
 Richard N. Hubert
 Marion Virginia Huey
 Lloyd Arthur Hunsley, Jr.
 Donald Frost Hunt
 Ann Hunter
 Reid DeBerry Huntley
 Arnold Worthington Hurt
 Thurlow Quinton Hutchinson
 Bruce Clayton Hyldahl
 Judith Ann Inman
 Donald Arthur Ives
 Thomas Neal Ivey
 Michael Hodges Jackson
 Theodore H. Jackson, Jr.
 Richard Benjamin Jacoves
 Audrey Dale Jessee
 Alice Gale Johnson
 Carolyn Johnson
 Charles Richardson Johnson
 Dorothy Jean Johnson
 Richard Gibbs Johnson
 Walter Royle Johnson, Jr.
 Anne Rankin Jordan
 Henry Harrison Jordan, II
 Lyndon Kirkman Jordan
 Frank Belton Joyner, Jr.
 Christian Adolph Jurgensen, III
 Stanley Brandon Kamm
 Leonard Macon Kamsler
 Claudette Taylor Kayler
 Adalyn Sherwood Kearns
 Evelyn Louise Keenan
 Walter Herman Keim
 George Frederick Keithley
 Ann Beeson Keller
 Ned Mansfield Kerstetter
 Carolyn Deane Ketner
 Jerome Willis Keyes
 Richard William Kienle
 Hugo Brown Kimball
 Arthur Ward King
 Milton Ray Kirby
 Jerome J. Kocourek, Jr.
 John Stanton Koernuer
 Ulrika Dorothy Kohler
 Milton Charles Konicek
 Nicholas Michael Kredich
 Susan Kurlbaum
 Boyd Lee Lambert
 Lampros Chris Lampros
 Carol Jeanette Land
 William Cobb Lane, Jr.
 Eddie John Larese
 Joy Ann LaRue
 Gail Lassiter
 Suzanne Latham
 Raymond Clarence Lauber
 Richard Randolph Lazard
 Blaney E. Lee
 William Swain Lee
 Raleigh Webster Leonard, Jr.
 Franklin Edwards Lewis
 Shirley Joyce Lindquist
 Theodore C. Littler
 Judith Lofquist
 Phillip Asbury Lomax
 Carol Pulver Lovett
 Marianna Elizabeth Lyon
 Charles Edward MacKenzie
 Martha Ann Mahanes
 Massud Mahdavi
 Michael Stephen Mahr
 Edward Manifold
 Claire Burdick Marcom
 Marvin Lee Marks
 Harris Andrew Marshall, Jr.
 Grace Jean Martin
 William Marion Martin, Jr.
 Alfred Glenn Masius, Jr.
 Edna Carson Mason
 Francis Stanford Massie
 Sylvia Dawn Mathis
 Lewis Richard Matthews, Jr.
 Sherry Strome Maxwell
 Shaun McArdle
 David Hollingsworth McClain
 Lee McClement
 Mary Louisa McCormick
 Berma Lucretia McDowell
 Robert Trusell McGaughey
 John Boyd McIlhenny
 Sally Warren McIntosh
 Robert Cooper McKee
 Don Evans McLeod
 John Robert McTammany

- James Carr Meador, Jr.
 George Winston Meeks
 Stephanie Warren Meltzer
 Repton Hall Merritt, Jr.
 Jadie Richard Metcalf
 Ada Helene Mewborn
 Jonzennie Mewborne
 Emil F. Milewski, Jr.
 Bruce Wilkinson Miller
 Dorothy Elizabeth Milteer
 Mary May Mitchell
 Daniel Bruce Moffett, Jr.
 Marilyn Dee Montgomery
 Joan Shirley Moore
 Robert Lee Moore
 Roy Edward Moore, Jr.
 Thomas Joseph Moore
 Helen Holmes Morgan
 Robert Whittelsey Morgan
 Wilson Avery Morgan, II
 Lloyd Alan Moriber
 Mary Rose Morris
 Wilbur Wright Moulton, Jr.
 Laura Isabelle Mull
 William Harry Mull
 Jerry Kent Mullins
 Charles Munch
 Robert P. Neely
 Donald N. Nelson
 Lee Crane Newth
 Creighton R. Nichols
 Anne Rhodes Nicholson
 Michael Barry Nitsberg
 Eugene William Noyes
 Richard Chapman Otter
 Michael St. John Outerson
 Nancy Barbara Coard Outerson
 Mary Jean Owen
 John Arthur Paar
 Patricia Carver Page
 Jean Ellen Pallange
 Donald Thomas Parsons
 Nancy Ware Pascal
 Robert Anthony Pascal
 William Rankin Patton
 Peggy Spence Paul
 Yvonne Madeleine Paulet
 Wade Hampton Penny, Jr.
 Patricia Elizabeth Perrin
 George Alden Perrine, Jr.
 Robert Hatton Peter
 Norman Doan Peterson
 John Whitney Pettit
 Araminta Purefoy Pierce
 Ann Lacy Poindexter
 Mary Louise Potter
 Richard Alden Prewitt
 Polly Ann Price
 Albert Rabil, Jr.
 Janet Spain Rabil
 Claude Laxton Raby, Jr.
 Margaret Avent Railey
 Clyde H. Ramsey, Jr.
 Ronald Charles Rau
 Herbert Barth Ray
 Ritz Clyde Ray, Jr.
 Leland Ernest Reaney
 Jane Steele Reece
 Frederick Arlington Regenold, Jr.
 Mary Janet Rich
 Robert Fox Richards
 Susan Herron Richards
 Robert Edward Rider
 John Acaster Ridley
 Jane Lee Ring
 Earl Lynn Roberson
 Sally Louise Roberts
 Donald Edward Robinson
 Dianne Lucille Rodgers
 Henry Charles Rohlf
 Robert Kelly Roney, III
 Allen Jay Rose
 Arthur H. Rosenfeld
 Robert David Rothermel
 Arnold Herbert Rotner
 William Francis Rouse
 Mark I. Rubel
 Helen Ann Ruddle
 Nancy Elizabeth Rudolph
 Fred L. Samojc
 Dolores Victoria Sampedro
 James Preston Sample, III
 Joel Charles Sandull
 Arline Rose Marie Schmidt
 Sally Ann Schumacher
 Louis Anthony Schwarz
 Donald Charles Sedlack
 John Ross Seltzer
 Michael I. Sentlowitz
 Peter Putnam Severson
 Vincent Louis Sgroso
 Donald Sutherland Shannon
 William Gray Sharpe, IV
 Robert Vickers Shaver
 Kay G. Shue
 Robert Lee Sigmon
 Helen Varina Simmons
 Ruth Jane Simons
 William Lee Singleton
 Mary Anne Slusser
 William McKinley Smiley, Jr.
 Ellwood Kelley Smith
 Frances Elizabeth Smith
 Mary Barbara Smith
 Robert Hull Smith
 Sandra Jean Smith
 Skottowe Wannamaker Smith
 William Andrew Smith
 William James Smith
 William Richard Smith
 James M. Snyder
 Phillip K. Sotel
 William Charles Spann
 William Frederick Speakman, Jr.
 Grizel Barron Spence
 Elizabeth Springston
 Jack Edward Starnes
 Nelson Gould Stevens, Jr.
 Joan Louise Steves
 Julian Harris Stewart
 Robert Purdy Stewart
 Martha Sharon Stokes
 Leanne Stone
 Mary Emma Stone
 Donald Harris Stover
 Robert Davidson Stuart, III
 Henry Jefferson Stuckey, II
 Robert Earle Sweat, Jr.
 Richard Perry Sweet
 Nancy Whanger Talman
 Wesley Fleming Talman, Jr.
 Robert William Tarleton
 James Warren Tarlton, III
 Sherard Austin Tatum, Jr.
 Sarah Elizabeth Taylor
 Richard L. Tenney
 Randall Bryant Terry, Jr.
 Carolyn May Thomas
 Frank Deaver Thomas
 John Charles Thompson
 Leo Clifford Thompson
 Stuart Vander Veer Thorn
 Robert William Thuenmel, Jr.
 Kay Tipton
 Katherine Lee Todd
 David Michael Tolmach
 Frank W. Tracy, Jr.
 Martin Van Kley Trapp
 Thomas Wheeler Trice, Jr.
 James Everett Turlington

James William Turtle
 Betty Jane Tuttle
 Sallie Virginia Tyree
 Richard Guy Ulrich
 Elizabeth Churchill Underwood
 Dolores Urquiza
 Florence Theodora Van Dyke
 Cynthia Virden
 Herbert Whiting Virgin, III
 Jean Elder Virgin
 Philip Anthony Vivona
 James Frederick Wagenvoord
 Barbara Anne Wagner
 Clifton Walker
 Robert Aldridge Walton
 Henry Hall Ware, III
 Hannah Fulford Warren
 Richard Edward Wasserman
 John Elwood Way, Jr.
 Elizabeth Ann Webb
 Fred Webb, Jr.
 Donald Knapp Webster
 Frank Cross Weidman
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Robert Warren Weitzman, Jr.
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 Patricia Welsh
 Ann Lenore Wescott
 Thaddeus Alvin Wheeler, Jr.
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 Susan Anne Whitener
 Margaret Alline Whitted
 Ernest Cornelius Widenhouse, Jr.
 Dale Richard Wiethe
 Carol Ann Williams
 Lila Cay Williams
 Constance Dinkler Wilson
 Douglas Nash Wilson
 Armando Julio Wirshing
 Milton Wayne Woodlief
 Ann Allan Woodward
 Catherine Anne Wright
 Donald J. Wright
 Frank Flowers Yarborough
 Charlotte Hazel Yates
 Robert Lassiter Young, Jr.
 Katharine Louise Zeigler
 John Wenzel Zimmer

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 Stephen Denio Baker
 Kenneth L. Clark
 Charles Henderson Dickens
 Larry Lee Farmer
 Hulda Virginia Fisher
 Charles Donald Forrest
 Edward Norval Fortson
 Henry Walter Gerock, Jr.
 J'Nelle Smoak Gibson
 Sally Lou Grant
 Ann C. Hadley
 Warren Edward Hagen
 J. Sanford Hardin, III
 Randall Leon Harrington
 Lynn David Ikenberry
 Boi Jon Jaeger
 Edward Marshall Jones
 William Wishart Kephart
 David Elliott Ketcham

Margaret Anne Lerro
 Claude Irenius Lewis
 Tillinghast Goethe Lybass
 Robert Lee Martin, Jr.
 Owen Link McConnell
 Lee William McLain, Jr.
 Carl Anthony Miller, Jr.
 David Moy
 Peter Tryon Nielsen
 Paul Blair Parks
 Mary Jane Phillips
 Roy Ransom Pool, Jr.
 George W. Porges
 Ruth Evelyn Stephenson
 Carolyn Fey Stutz
 Betty Jane Suits
 Stuart Paul Suskind
 Ballard E. Troy, Jr.
 Walter Victor Weyhmann
 Joseph Lowell Wyrick

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Margaret Belle Beck
 Jean Byrd
 Carol Cook
 Betty Bouchlas Dorton
 Shirley Ann Garner
 Nell Furgason Higgins
 Elizabeth Susan Justice
 Joyce Lee Kessler
 Elise Polk Lehman

Lula Panagis
 Elizabeth B. Phelps
 Nellie Maxine Sanderson
 Doris Wayne Shepherd
 Mary Juanita Todd
 Mary Elizabeth Tyndall
 Agnes Marie Werner
 Donna Joanne Yancey

B.S. DEGREE IN NURSING EDUCATION

Barbara Ione Dunlevy
 Shirley Bowman Howe
 Cynthia Elizabeth Hudspeth
 Jessie Propst Kiser

Lucille M. Kristunas
 Josephine Ransdell
 Virginia Hunter Sinclair

B.S. DEGREE IN CIVIL ENGINEERING

John Henry Bell, Jr.
 George Erle Bouse, Jr.
 John Patrick Cogan
 Carlisle Furman Cook, Jr.
 Donald Gilbert David
 George Roy Elmore, Jr.
 Robert Schwalm Goudy
 Neil Hamilton Harley
 Peter George Hoadley
 Simón Alfredo Izaguirre Bustamante

Henry Louis Mahns
 Robert Ranson Mueser
 William Rudolph Pape, Jr.
 Michael J. Pierry, Jr.
 Fuad Raji Qubein
 Roger Emerson Rinaldi
 Warren Andrew Ruefer
 Joseph Alan Ruscyk
 Frederick Gayle Sheppard

P.S. DEGREE IN ELECTRICAL ENGINEERING

Anthony Leon Almond
Lloyd Linwood Beale
John Roy Beck
Edwin John Boothroyd
James Owens Brady
Charles Harper Carr
William Hix Cherry, Jr.
Robert Charles Clifton
William Craig Connor
Simeon Henry Cotton, Jr.
Franklin Lee Derrick, Jr.
Fredrick William Egli
Benjamin Milton Frizzell, Jr.
David B. Godfrey, Jr.
Donald Cameron Griffiths, II

William Karl Haeckler
William Edward Hammond
Holland Neal Headley
Colin Mastin Jones
Robert Loux Kline, Jr.
Sidney George Lineker, Jr.
William Dale McMan
Howard P. Meredith, Jr.
Theodore M. Parker
John David Peyton
Edward Clarence Rodgers
Roger William Tatem, Jr.
James Willard Vaughan, Jr.
John Marcellus Vilas
Frank Thomas Wooten, III

B.S. DEGREE IN MECHANICAL ENGINEERING

Humberto Lazaro Arcocha
George Bernard Baker
Philip Benton Baker
Charles Haynes Barnes
Frederic Brown
Walter Louis Brown
Edward Jay Carey
Robert Rhyne Carpenter, Jr.
Lawrence Diercks Decker
Hugo José Finol
Joseph Robert Godwin
Walter Eastburn Greene
Donald Horace Heim
Larry William Hoffman
Donald Kempler

Julius King
Joseph Wallace Little, Jr.
Thomas Francis Lowe
Donald F. Manning
Richard Finley Mason
Richard Arthur McConnell
Allen Mead
Alirio José Moreno Finol
John Archie Murray, Jr.
Paul David Risher
Parvin Masters Russell, Jr.
Donald McEwen Ware
Robert Hamlin Waser
Robert Edward Whitacre

DIPLOMA IN NURSING

Frances Ervin Brawley
Talitha Jane Chandler
Nellie Yvonne Churchill
Sarah Anita Culver
Floride Ernestine Curl
Christia Hunt Davis
Dorothy Elizabeth England
Donna Vee Hager
Barbara Joanne Hoffman
Nancy Louise Howell
Sallie Page Ives
Gloria Elsie Meyer

Marjorie Brewer Myers
Jean Carolyn Parker
Carolyn Ann Rush
Frances Maxine Smith
Sharon Lynn Speaker
Eileen Hilary Sullivan
Alma Marguerite Thain
Loretta Kay Thompson
Tanya Dawn Tillert
Anne Louise Whitley
Joan Worrall

B.S. DEGREE IN NURSING

Alena Ann Anderson
Jo Ann Baughan
Phyllis Meriden Bedell
Marcia Caroline Black
Sybilene Blinson
Carol Ann Brady
Joan Claudette Brown
Patricia Gayle Chandler
Jo Anne Chavis
Sarah Ellen Cochran
Linda Anne Conant
Russelline Boone Craddock
Ollie B. Davenport
Gretchen Deichmann
Sue Annette Dewein
Mary Ann Edens
Nancy Helen Gallienne
Mary Kathryn Gregory
Shirley Marion Grier
Elinor Emery Guinn
Mary Jo Ingalls
Margaret Ann Jackson

Virginia Carolina Jessup
Marcella Goldsmith Johnston
Virginia Appleby Johnston
Patricia Porter LaRue
Emma Jane Lawhon
Patricia Anne Lindgren
Sue Anne MacNary
Katherine Keller Maultsby
Ann Pace
Clara Joyce Peck
Erliene Rainey
Carol Cynthia Raught
Beverly June Reece
Dawn Irene Ferman Reed
Mary Eleanor Reich
Doris Bullock Salmon
Margaret Avery Schreiner
Mary Ann Holloway Stark
Kathleen Thomas
Carol Elizabeth Wayt
Lois Gertrude Wooten
Mary Anne Young

P.S. DEGREE IN MEDICINE

Roger Berry
Joseph Plummer Bunn
Elbert Luther Fisher, Jr.
Robert Galloway Moseley

Henry Thomas Perkins, Jr.
Hal Judd Rollins
Henry Alexander Yancey, Jr.

A.M. DEGREE IN TEACHING

Thelma Cole Barclift Crowder
 Jerry Beaman Day
 Daniel Studd Grubb

Isabelle Ellis Hart
 Paul Gene Toxie
 Mary Evelyn York

M.R.E. DEGREE

Julia Mae Allen
 Patsy Emma Hinds

Jewel Anne Jones
 Mary Jo Whitted

M.ED. DEGREE

John Morgan Flowers, Jr.
 Carmen Gimpaya Gollena
 Hellen Anne Hutchinson

Tirlochan Kaur
 Allison Deans Wells

M.F. DEGREE

James Passmore Barrett
 James Edward Bethune
 Charles Sherman Calkins
 Jerome Lee Clutter
 William Walton Gleaves

Richard Ernest Hug
 Charles James Kozlik
 Gordon Depew Lewis
 Charles Eugene McGee
 William Ripley, III

A.M. DEGREE

Saowanee Bhanthumchinda
 Charles Eugene Cain
 Yoon Ai Choi
 William Mynell Clarke
 William Grandy Curtis
 Felton Jane Dildy
 Edward Keith Dix
 James Boyer Ebert
 Clyde Randolph Ferguson
 Carlos Thomas Flick
 Betty Louise Fortna
 Lois Roccatelle Geraci
 Janet Isabel Gillette
 Irving Jay Goffman

Fred Monroe Gottheil
 Charles Morris Hoskin
 Margaret Neel Query Keller
 Louis Henry Manarin
 Betsy Brooks McGee
 Paul N. Miller
 Joanna Woodson Parrish
 Mary Jo Fribble
 Edward William Ryan
 Marvin Kenneth Singleton
 Leslie Howard Sperling
 Lawrence Robert Stires, Jr.
 Birdsall Scrymser Vault
 Mildred Louise Wood

B.D. DEGREE

James M. Armstrong, Jr.
 William Ray Bailey
 Fred Donald Beaty
 Ellis Jennings Bedsworth
 William P. Berry
 Charles Edward Blackburn
 Erman Franklin Bradley
 Julian LeGrande Byrd, Jr.
 Rosser Lee Clapp
 Howard Luther Coleman
 Laughton Lee Corr
 Frank Sprint Crim
 Earl Pickett Crow, Jr.
 Beverly Madison Currin, Jr.
 William Heller Dyar
 James Brink Eskridge
 Joseph Conrad Glass, Jr.
 James William Goodwin
 Henry Monroe Groseclose
 Coriless Victor Hanson
 Sidney Alexander Head
 Theodore Schott Hoffmann
 Robert Earl James
 Harold Julian Keating
 George E. Lyndon, Jr.
 Thomas Wheeler Madren
 Jack Percia Mansfield
 Murray Anthony Martin

Richard Kelly Martin
 Jacob Christian Martinson, Jr.
 Randall Chaplain Mason, Jr.
 Cecil Kenneth Myrick
 James Herbert Nates, Jr.
 Edwin Garber Needham
 Richard Armstrong Northrop
 Weldon Thomas Parsons, Jr.
 Robert John Penberthy
 Henry Morrison Pollock
 Horace Gilbert Quigley
 Lisle Frederick Rath
 Robert Glenn Russell, Jr.
 Daniel Dennis Sain
 Lewis Bill Simmons
 Dwight Moody Smith, Jr.
 Jack Courtney Smith
 James Braxton Speight
 Rufus Haywood Stark, II
 Walter Eugene Tisdale
 Wilhelm Siegfried Volskis
 William N. Walter
 Thomas Wallace Weeks
 Tennyson Lucious Whorton, Jr.
 Barrett Dallas Wilson
 Hamilton Clarke Witter
 Sam J. Womack, Jr.
 Charles Milton Young

LL.B. DEGREE

John D. Ayres, Jr.
 Robert H. Beber
 Robert Wallace Bradshaw, Jr.
 Eugene Clyde Brooks, III
 David Ross Chipman
 Franklin Curtis
 Irwin Lawrence Dickman
 Winslow Drummond, II
 Charles Aubrey Dukes, Jr.
 Ernest Wilson Dyer
 Merle DeVere Evans, Jr.

David Aaron Friedman
 Louis Thomas Gallo
 Richard Edward Glaze
 George William Hackett
 Elliott T. Halio
 Theodore Pollard Huggins
 Kenneth A. Janello
 Donald Cushing Knickerbocker
 Bernard M. Kostelnik
 Anthony Joseph Leggio
 Horace Buel Loomis, III

William G. Louis-Dreyfus
 Milburn Marvin Moore
 Robert G. Petree
 Edward Paul Pizer
 Harvey Ruddy Robinson
 Herbert S. Savitt

Richard T. Schwartz
 R. Horace Swiggett, Jr.
 Robert Worth Taylor
 Gerald Bard Tjoflat
 Robert Charles Wagner
 Stephen Drake Walsh

M.D. DEGREE

Herbert Charles Anderson
 Billy Franklin Andrews
 George Edgar Bacon
 Lamuel Edgar Barnhill, Jr.
 Harry Welling Barrick, Jr.
 Richard Ferrandou Bedell
 William Griffith Blackard
 Lawrence Thompson Bowles
 Rubin Bressler
 Albert Marvin Bromberg
 Joseph Plummer Bunn
 Stanley Joel Cannon
 James Burns Creighton, Jr.
 Thomas Leroy Dulin
 Thomas David Elder
 Robert Norwood Ellington
 Thomas Dudley Bogges Fennell
 Elbert Luther Fisher, Jr.
 Lucy Vaughan Rawlings Freedy
 James Walker Fulton
 Thomas Guthrie Gibson, Jr.
 Dingess Monroe Givens
 Jerome Alvin Grunt
 Lois Sue Hale
 James Samuel Hall, Jr.
 Eugene Lincoln Harley
 Thomas Harold Harrison
 David Bennett Hill
 Ralph Rodney Howell
 Ralph Melvin Howe
 Lawrence Ronald Hurst
 Walter Scott James, Jr.
 Paul Armstrong Johnson
 Stephen Benjamin Karpman
 Donald Holland Keller
 Shirley Elizabeth Kirkman
 Edward John Kitlowski
 Dixon Alexander Lackey, Jr.
 Sidney Irwin LeBauer

Angus Guy McInnis, Jr.
 Charles Curtis Meltzer
 Robert Galloway Moseley
 Samuel Edward Myrick, Jr.
 Boris Louis O'Mansky
 Samuel Isaac O'Mansky
 James Frank O'Neill
 William Edward Painter
 Constantine George Pantelakos
 Roman Lee Patrick, Jr.
 George Pepper
 Henry Thomas Perkins, Jr.
 Richard Theodric Pillsbury, Jr.
 Robert Lewis Poston
 Albert Henry Powell, Jr.
 William Ivan Procter, Jr.
 James Seymour Redmond, Jr.
 Owen Reese, Jr.
 Nathan Alvah Ridgeway, Jr.
 Richard Lionel Rogers
 Ralph Emerson Roughton, Jr.
 Clyde Vernon Sanders, Jr.
 Luther Cook Sappenfield, Jr.
 George Howard Satterfield, Jr.
 Harold Paul Schulz, Jr.
 Melvin Jay Schwartz
 Lee Marcus Seagle, Jr.
 Hugh Maurice Shingleton
 Robert Laber Smith
 Whitman Erskine Smith, Jr.
 Alan Solomon
 Angelo Peter Spoto, Jr.
 Charles Leslie Sweeney, Jr.
 Robert Wade Taylor
 Druery Russell Thorn
 Edward Bernard Weiss
 Marcus Branch Wilkes, Jr.
 Henry Alexander Yancey, Jr.
 Karl Adams Zener

ED.D. DEGREE

Frederick Willard Kirby

Frank Nania

D.F. DEGREE

Mykyta Victor Bilan
 Charles Buford Briscoe

George Mason Furnival

PH.D. DEGREE

George Milton Addy
 Robert Ruifernandez Alvarez
 Donald Kennedy Anderson, Jr.
 John Allen Attaway
 Samuel Henry Barnes
 Rubin Battino
 Walter William Benjamin
 Joseph Laurence Bernd
 Gilbert Sanders Blevins
 Charles Alan Boneau
 Elbert Victor Bowden
 Rev. Francis P. Canavan, S.J.
 Tien Chi Chen
 Harry Herbert Corson, III
 George Carmon Cozad
 Hertha Ramsey Cress
 Wilbon Harrison Daniel
 Pasquale De Santo
 Clyde Henry Dornbusch
 William David Fisher
 Robert G. Gardner
 Willard Badgette Gatewood, Jr.

Spencer Rex Gervin
 Phillip Jennings Hamrick, Jr.
 Douglas Graham Hartle
 Harry Lewis Harvin, Jr.
 Wade Franklin Hook
 Walter Edward Hudgins
 Robert Bruce Jackson, Jr.
 Julius Robert Johnson, Jr.
 William Watkins Kelly
 Clifford Burnham Knight, Jr.
 Norman Davis Knox
 Jacque King Lindsay
 Robert Maurice Linn
 Samuel Patterson Maroney, Jr.
 James Leon McAllister, Jr.
 Phillip Dewey McCoury
 Perry Wilkes Morton, Jr.
 Bernard Vernon Munger
 John Aloysius Murray
 John William Olness
 Max Eugene Polley
 Jack Preiss

Olin Sharpe Pugh
 Harvey Nixon Rexroad
 Patricia Ruth Roberts
 Grimes Gibbons Slaughter
 Calvin Clifton Smith
 Richard Clark Smith
 Arthur Robert Steele
 Edgar F. Stillwell

Alfonso Trejos
 Donald Neil Van Eenam
 Jack Vorona
 Sidney Thomas Webster
 Alfred Dennis Winer
 Miroslava Nikitovitch Winer
 George Thomas Youngblood

COMMISSIONS IN UNITED STATES NAVY AND UNITED STATES MARINE CORPS

Ensign, United States Navy, NROTC

John Roy Beck
 Lawrence Ray Bishop
 Robert Charles Clifton
 Carlisle Furman Cook, Jr.
 William Guild Crockett
 Lawrence Diercks Decker
 Harleigh Franklin Fatzinger, Jr.
 Stephen Crum Gardner
 James Harman Gilbert, Jr.
 Joseph Robert Godwin
 William Edward Hammond
 Eugene Starke Harris
 Harry Stewart Havens
 Charles McKinnon Hensley
 Robert Arthur Hohner
 Thurlow Quinton Hutchinson

Colin Mastin Jones
 Milton Ray Kirby
 Harris Andrew Marshall, Jr.
 Richard Finley Mason
 Allen Mead
 John Archie Murray, Jr.
 Phillip Kirban Sotel
 Julian Harris Stewart
 Stuart Vander Veer Thorn
 Thomas Wheeler Trice, Jr.
 James Willard Vaughan, Jr.
 Henry Hall Ware, III
 Robert Warren Weitzman, Jr.
 Armando Julio Wirshing
 Frank Thomas Wooten, III

Second Lieutenant, United States Marine Corps, NROTC

Frederick Jerome Beasley
 William Dick Beaty
 John Patrick Cogan
 Thomas Francis Lowe
 John Boyd McIlhenny

Bruce Wilkinson Miller
 John Acaster Ridley
 Robert William Thuemmel, Jr.
 Paul Gene Toxie
 Douglas Nash Wilson

Second Lieutenant, United States Marine Corps, Platoon Leaders Class

John Henry Bell, Jr.
 Milton Charles Konicek

Robert Trusell McGaughey

COMMISSION OF SECOND LIEUTENANT, UNITED STATES AIR FORCE

Frederick Charles Arnold
 Petras V. Avizonis
 Edwin John Boothroyd
 Oscar Charlie Chewning, Jr.
 William Ronald Deans
 Benjamin Milton Frizzell, Jr.
 James Michael Fulcomer
 Joe Grills
 Neil Hamilton Harley
 Donald Kempler
 Don Evans McLeod
 William Dale McMan

Howard P. Meredith, Jr.
 Roy Edward Moore, Jr.
 John Whitney Pettit
 John David Peyton
 Warren Andrew Ruefer
 Richard W. Schaffer
 John Ross Seltzer
 Richard Guy Ulrich
 Donald McEwen Ware
 Thaddeus Alvin Wheeler, Jr.
 Joseph Lowell Wyrick

DEGREES AWARDED SEPTEMBER 1, 1956

A.B. DEGREE

Halbert Eugene Ashworth
 Charles Nachman Becker
 Jane Phillips Bell
 Robert Samuel Brice, Jr.
 E. Ray Calaway
 Richard Marvin Carlisle, Jr.
 Samuel King Carter
 John Evans Chritton
 Jane Marie Eberhardt Clark
 Don Wayne Crews
 Robert Gordon Dickens
 John William Edmunds
 Donald Lee Elliott
 Walter Rowe Fesperman, Jr.
 William Everett Finney
 Kristin Lee Gebel
 Albert Melvin Gumb, Jr.
 Grady Lee Hamrick
 Gladys Hinson Harris
 Harrietta Heaton
 George Burbank Herndon, Jr.
 James Manning Hiers

Carnie P. Hipp, Jr.
 Eldridge Lee Hopper
 George Fielder Houck
 Everette Lane House
 John Camden Hundley, Jr.
 David Eugene Hurst
 Don Morton Knotts
 Anne Marie Kulcsar
 William Emory Lowe, Jr.
 Newton C. McCollough, III
 Lewis Beach Marvin, III
 Fumiaki Matsushita
 Ronald Bruce Mayer
 Eben Cornelius Morgan, Jr.
 Robert Edward Murphy
 Robert Nordham
 Mary MacRae Patton
 Richard Charles Shay
 Gerald Rivers Shugar
 James Shelton Stanford
 Dwight Burton Stark
 Peter Van Voorhees Taylor

Patricia Ann Jordan Teller
Harold Edmond Turner
Ralph F. Whitfield, Jr.
Carolyn Leary Williams

Calvin Johnson Willis
Anthony Milam Wilson
Owen Craig Wilson, Jr.

Robert Jenquen Chun
Allan Harry Haack

B.S. DEGREE

James Russell Ransom

B.S. DEGREE IN NURSING EDUCATION

Ruby Gilbert Barnes
Luetta Nevada Booe
Opal Marie Burns
Dorothy Harriet Francis

Margaret Carter Kotliar
Mary Anne Facemire McLellan
Eunice Mae Smith

B.S. DEGREE IN CIVIL ENGINEERING

Lucian Jackson Dale, Jr.

William Marcellus Russ, Jr.

B.S. DEGREE IN MECHANICAL ENGINEERING

Gordon Dale Boyd
James Edward Hardin

Joseph Frank McDonald
David M. Peterson

B.S. DEGREE IN NURSING

Donna Marie Ajac
Eula Elizabeth Hux

Evelyn Joyce Parker
Elizabeth Lerda Spalding

A.M. DEGREE IN TEACHING

Vicenta Calvo Alonso
Anne-Marie Bryan
Mary Forehand Evans
Janet Agnes Harrington
Jean Elizabeth Helbig
Robert Alan Hogg
Howard E. Kaplan

Donald Leon Long
Jeannette Weaver Payne
Marvin Perry
Sylvia Davis Robinson
Mary Conley Taylor
Josie Chapman Tomlinson

M.ED. DEGREE

Dorothy Lee Dixon
Marjorie Wood Hatten
Rachel D. Hoffenberg
Sarah Hodgkin McDonald

Cora Mayo Mullins
Martha Frances Peeler
William Kemper Putney, Jr.
Marvin Lee Woodard

A.M. DEGREE

Charles William Baird
Vereen McNeill Bell
Charles Edward Brooks
Barbara Ann Cooney
Katie Lou DeBouy
John Edward Durham, Jr.
Sylvia Alice Earle
Ursula Elizabeth Hess
Kenneth Lee Holmes
Victor Hobbs Hutchison

Glenn LaPorte Johnson
Marguerite-Marie Jourdan
Robert Allan Mitchell
Maryanne Elizabeth Robinson
Mary Anne Sellars
Judith Elna Sund
Julius Weber Waits
Murrell Davis Weesner
T. Webster Williams

HONORS AND PRIZES

Summa cum laude

JUNE 3, 1957

Claire Burdick Marcom
David M. Hay
Joseph Wallace Little, Jr.
Tallulah Ann Brown

Charles Henderson Dickens
Claudette Taylor Kayler
Berma Lucretia McDowell
Theodore M. Parker

Magna cum laude

JUNE 3, 1957

Nora Grant Alston
John Arthur Paar
Dolores Urquiza
Sally Louise Roberts
Frederick William Egli
Donald Dwight Duffey
Yvonne Madeleine Paulet
Florence Theodora Van Dyke
Nancy Lucille Bowles
Harry S. Havens
Joe Grills

James Willard Vaughan
Parvin Masters Russell, Jr.
Dorothy Ann Felson
Shirley Anne Davis
Carol Byrd
Norman Doan Peterson
John Roy Beck
Joseph Robert Godwin
Sandra Jean Smith
William T. Harrison

SEPTEMBER 1, 1956

Newton Clark McCollough

HONORS IN DEPARTMENTS AND SCHOOLS
DEPARTMENTAL GRADUATIONS WITH DISTINCTION

HISTORY

Walter Fallaw
Evelyn Keenan

Claire Marcom

ENGLISH

Martha Hester
Patricia Page

Sally Roberts
Kay Tipton

CHEMISTRY

Lynn Ikenberry

CIVIL ENGINEERING

Robert Goudy

Peter Hoadley

ELECTRICAL ENGINEERING

James W. Vaughan, Jr.

MECHANICAL ENGINEERING

Joseph Little

PSYCHOLOGY

Nora Alston
Nancy Bowles

David Hay
Nancy Tolman

ECONOMICS

Mike Sentlowitz
Harry Havens

Catherine Anne Wright

PHYSICS

Dolores Urquiza
Paul Parks

Walter Weyhmann

DEPARTMENT OF AIR SCIENCE
Distinguished Military Graduates

Joe Grills
William Dale McMan

John David Peyton
Donald McEwen Ware

SCHOOL OF LAW

Elections to the Order of the Coif

Robert Wallace Bradshaw, Jr.
Winslow Drummond, II

Bernard M. Kostelnik

Graduated "With Distinction"

Robert Wallace Bradshaw, Jr.
Winslow Drummond, II

Louis Thomas Gallo
Bernard M. Kostelnik

Willis Smith Prize—Robert Wallace Bradshaw, Jr.

SCHOOL OF MEDICINE

Elections to Alpha Omega Alpha, Honorary Medical Fraternity

William Griffith Blackard
Lawrence Thompson Bowles
Rubin Bressler
Thomas Leroy Dulin
Thomas David Elder
Lucy Vaughan Rawlings Freedy

Ralph Rodney Howell
Paul Armstrong Johnson
James Frank O'Neill
Roman Lee Patrick, Jr.
Lee Marcus Seagle, Jr.
Alan Solomon

SPECIAL HONORS AND PRIZES

The Robert E. Lee Prize
Thomas Grosvenor Colmey
Anne Flexner Memorial Award in Creative Writing
David M. Hay
Julia Dale Prize in Mathematics
Priscilla Edson

W. T. Peters
Woman's Panhellenic Scholarship
Janet Gruber
Alice M. Baldwin Scholarship Award
Margie Ann Applebee
Mildred Crinkley
Sally Davidson

- Virginia Keister
 Roberta Lea
 Charlotte McDougal
 Carolyn Peters
 Dorothy Regan
 Melissa Shuler
Woman's College Memorial Scholarship
 Rachel McCastlain
 Ann Stephenson
Sandals Scholarship—Mary Maddry
William Senhauser Prize
 Claud McNeill Grigg
Erasmus Club Prize in the Humanities
 Lou Ella Hicks
The Milmore Prize
 John M. Vilas
Frieds of the Duke University Library Awards
 Repton H. Merritt
 George C. Hudson, Jr.
 Frank N. Egerton, III
General Chemistry Prizes
 Teny S. Carlton
 Frederick F. Andrews
Alpha Kappa Psi Scholarship Award
 Joe Grills
Delta Delta Delta Scholarship Award
 Roberta Lea
North Carolina Association of Certified Public Accountants Award
 Susan Ann Erwin
- Phi Lambda Upsilon Award*
 David L. Nealy
Algernon Sydney Sullivan Awards
 Edgar Beauregarde Fisher, Jr.
 Mary Barbara Smith
The Florence Nightingale Alumnae Plaque
 Mary Jo Ingalls
The Moseley Award
 Alma Marguerite Thain
Borden Undergraduate Research Award in Medicine
 Rubin Bressler
 Robert Galloway Moseley
 Luther Cook Sappenfield, Jr.
C. V. Mosby Scholarship Awards
 William Griffith Blackard
 Lucy Vaughan Rawlings Freedy
 Ralph Rodney Howell
 Paul Armstrong Johnson
 Alan Solomon
American Academy of Dental Medicine Award
 Samuel Edward Myrick, Jr.
Merck Manual Award
 Roman Lee Patrick, Jr.
 James Frank O'Neill
Merck Index Award
 Joseph Carr Eggleston
 Thomas Frank Camp, Jr.
Pi Tau Sigma Award
 Joseph W. Little, Jr.

TRINITY HONORS

FRESHMAN HONORS

Students listed according to average

- Terry Scott Carlton
 Warren George Wickersham
 James Robert Brown
 Stephen Jay Shimm
 Robert Doyle Anderson
 Rudolf Thunberg
 David Freeman Paulson
 Elliott Phesanton Hinely
 Frederick Frank Andrews
 John Marshall Porter
- Harmon Thomas Gnuse
 Edward Dennis Theriot, Jr.
 Philip Wade McClain
 Warner Curtis Scott
 John Matthew Keith, Jr.
 Richard Louis Cohen
 Gilbert Carl Thelen, Jr.
 William Lowell Campbell
 John Hadley Strange

SOPHOMORE HONORS

- Charles Bryan Duke
 Julian Conrad Juergensmeyer
 Robert Hugh Kargon
 Charles Vernon Ricks
 Charles Harrison Culp
 Thomas Anthony Calhoun
 Karl David Straub
 Heinrich Michael Tschinkel
 Michael Taylor Malone
- Richard James Wood
 Ralph Joseph Deschler
 Fernando Cardoze
 Jason Reid Auman
 Russell Alexander Phillips, Jr.
 Thomas Pegram Graham, Jr.
 Charles Allen Thompson
 Karl John Stumpf
 Joseph H. Riddick, Jr.

JUNIOR HONORS

- David Edward Kemp
 Donald Smiley Burdick
 Benjamin Bridges, Jr.
 Bruce Carroll Tyson, Jr.
 Alan Taylor Bradford
 Thomas Willets Clayton
 Thomas Frank Camp, Jr.
 Robert Morro Longworth
 Keith Eugene Davis
 Latham Flanagan, Jr.
 Howard Hillel Berman
 Edward Orth Doughtie
 Hilliard Manley Eure, III
 William Joseph Spencer
- Stephen Liddon Hester
 Joseph Carr Eggleston
 Thomas Arthur Baylis
 David Lewis Nealy
 William George Meffert
 Carl Jerome Stewart, Jr.
 Wallace Craft Fallow
 Clifton Rance Cleaveland
 James Dailey Barker, Jr.
 Howard Ruben Bloch
 Robert Thomas Johnson, Jr.
 Lloyd Richard Bailey
 Bruce De Simon DeMonterice

WOMAN'S COLLEGE

FRESHMAN HONORS

- Mary Helen Malone
 Cynthia Anne Stokes
 Yvonne Nasser
- Lena Margaret Bradley
 Gail Elizabeth Foster
 Anne Brewer Thompson

Sally Holt Rhodes
 Judith Lynn McKay
 Hildegard Gertrude Kopf
 Joan Marie Durstine
 Cynthia Ann Stober
 Polly Vance Akin
 Sarah Harriette Hunter

Jane Ogle Hastings
 Julianne Stauffer
 Margaret Camilla Grady
 Rae Fruth Allen
 Diane Elizabeth Loy
 Catherine Bourdon Clark
 Judith Jane Staley

SOPHOMORE HONORS

Priscilla Irene Edson
 Barbara Regenia Tyler
 Anna Elizabeth Haney
 Sally Ann Davidson
 Winnie Davis Satterfield
 Carolyn Lydia Grosz
 Mary Chauncey Persons
 Ardis Anne Baker
 Nancy Ann Nutter
 Annette Waters
 Susan Rebecca Dunlap
 Carolyn Faith Morse

Karen Ina Margulies
 Dorothy Battle Rankin
 Harriet Jane Drawbaugh
 Nancy Kate deLong
 Lillian Joan Blanton
 Margaret Blaisdell
 Mary Josephine Reinhardt
 Loretto Gertrude Boxwell
 Virginia Cox MacIvor
 Carol Annette Cleave
 Eleanor Theresa Derienzo

JUNIOR HONORS

Jane Sherron Dehart
 Constance McKnight Malmar
 Julia Adair Foster
 Diane Sullivan Elliott
 Elinor Jane Perry
 Mildred Stewart Crinkley
 Mary Irving Carlyle
 Anna McLester French
 Jean Dickerson
 Margaret Catherine McLean
 Barbara Ann Barksdale
 Sarah Jean Thomas
 Clara Katherine Hale
 Carol Ann Cooper
 Thelma Small Schmitt
 Tamra Irvin Cooper
 Margie Ann Applebee

Diana Lee Risien
 Joan Carolyn Wells
 Frances Metzger Greene
 Martha Elizabeth Hester
 Sherri Rhoda Forrester
 Virginia Dare Keister
 Gladys Cater Culton
 Karen Florence Lundmark
 Sara Hawthorne Lewis
 Mary Irma Wade
 Carol Janet Skillin
 Diana Gene Senff
 Charlotte Ann McDougal
 Judith Elizabeth Brugh
 Roberta Susan Hill
 Carolyn Ruth Holsinger
 Carlese Carolyn Mott

COLLEGE OF ENGINEERING

SOPHOMORE HONORS

Charles Leland Bassett
 Fred Oscar Brownson
 William Thomas Peters

Richmond Wiley Bourne, Jr.
 Joseph Andrew Yura

JUNIOR HONORS

Craig Arnold Brandon
 David Walrath
 John Edward Jenkins, Jr.

Terry Alfred Cracknell
 Leonidas John Jones

Summary

Government, Administration, and Instruction

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GENERAL ADMINISTRATION	7
INSTRUCTIONAL STAFF	630*
Professors	188
Associate Professors	114
Assistant Professors	146
Associates	44
Lecturers	6
Instructors	72
Part-time Instructors	42
Visiting Professors and Lecturers	18
EDUCATIONAL ADMINISTRATION	15†
BUSINESS ADMINISTRATION	17‡
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OTHER OFFICERS	40††
Duke University Press	3
Legal Aid Clinic	5
Music and Art	3
Physical Education, Trinity College	9
House Counselors, Woman's College	8
Food Services	10
The University Stores	2
THE UNIVERSITY LIBRARIES	64††
TOTAL	874§§

* Does not include one officer with academic rank listed with the General Administration.

† Does not include 23 officers with academic rank listed with the Instructional Staff.

‡ Does not include three officers listed with the General Administration.

§ Does not include one officer listed with the General Administration and one officer listed with the Business Administration.

** Does not include one officer listed with the General Administration, seven officers with academic rank listed with the Instructional Staff, and one officer listed with the Educational Administration.

†† Does not include 15 officers with academic rank listed with the Instructional Staff.

‡‡ Does not include two officers with academic rank listed with the Instructional Staff.

§§ Does not include duplications. An officer is counted in the first category in which his name appears.

ENROLLMENT ON THE SEMESTER BASIS—1956-57

<i>School or College</i>	<i>Fall Semester 1956</i>	<i>Spring Semester 1957</i>
TRINITY COLLEGE		
Regular Students	1,825	1,747
Special Students	41	29
Total	1,866	1,776
COLLEGE OF ENGINEERING		
Regular Students	476	436
Special Students	1	2
Total	477	438
WOMAN'S COLLEGE		
Regular Students	1,030	999
Special Students	65	34
Total	1,095	1,033
DIVINITY SCHOOL		
Regular Students	222	206
Special Students	6	4
Total	228	210
SCHOOL OF FORESTRY		
Regular Students	29	33
Special Students	8	7
Total	37	40
SCHOOL OF LAW		
Regular Students	125	121
Special Students	2	3
Total	127	124
GRADUATE SCHOOL OF ARTS AND SCIENCES		
Regular Students	390	374
Special Students	73	78
Total	463	452
SCHOOL OF NURSING		
Regular Students	230	222
Diploma Students	64	62
Total	294	284
TOTAL ENROLLED ON SEMESTER BASIS		
Regular Students	4,327	4,138
Special Students	260	219
Total	4,587	4,357

ENROLLMENT ON THE QUARTER BASIS-1956-57

Medical School	Summer Quarter 1956	Fall Quarter 1957	Winter Quarter 1956	Spring Quarter 1957
Regular Students	48	306	295	289
Fellows	12	12	12	12
Interns	57	57	57	57
Residents	25	25	25	25
Assistant Residents	118	118	118	118
TOTAL ENROLLED ON QUARTER BASIS	260	518	507	501

MISCELLANEOUS TERMS

Course	Number of Students	Length of Term	Beginning of Term
Anesthesiology	16	12 & 18 mos.	Registration January
Dietetics	10	12 months	Registration September
Hospital Administration	8	24 months	Appointments Jan. & July
Medical Technology	20	21 months	Registration September
Physical Therapy	22	15 months	Registration October
Record Library	4	12 months	Registration October
X-Ray Technology	13	12 months	Registration September

SUMMARY: FALL AND SPRING ENROLLMENT—1956-57

Fall Enrollment	5,105
Spring Enrollment	4,858

SUMMER ENROLLMENT

	Term I	Term II	July
Regular Students	1,132	796	
Mycology			20

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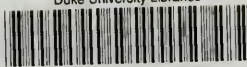
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